The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 750.---Vol. XX.] LONDON, SATURDAY, JANUARY 5, 1850. [Price 6d.

CAMBORNE—MINE AND MATERIALS FOR SALE.

MESSRS. RICHARDS & PRYOR respectfully announce that AN AUCTION will be HELD on Monday, the 14th day of January next, at Two o'clock in the afternoon, at Mathews's Hotel, in CAMBORNE, in the county of Cornwall, for SELLING, for the residues of the several terms now subsisting therein, under the existing setts granted by the lords of the soil, all that COPPER MINE, or ADVENTURE, called or known by the name of

SOUTH ROSKEAR,

situate in CAMBORNE, in Cornwall, and extending upwards of a mile in length on the course of the lodes, a very considerable portion of the limits of which is unexplored, and which mine is contiguous to or surrounded by some of the most productive mines in Cornwall, being within a short distance of, and bounded on the east by, East Wheal Crofty; on the north by North Roskear; and on the south by Dolcoath and Camborne Consols—all of which have yielded large profits to the adventurers for many years, together with the carpenters' and smiths' shops, engines, machinery, and materials belonging to the mine, comprising TWO STEAM-ENGINES, of 60 and 35-inch cylinders; TWO STEAM WHIMS, of 20 and 16-inch cylinders; TWO HORSE WHIMS; about 350 fms. of PITWORK, with all requisite and necessary machinery and materials.

The mine is at present divided into 114 shares, and has been worked for 26 years and upwards, during which large profits have been realised.

The limits of the setts have been recently extended, which has rendered the erection of a new steam-engine necessary, and some of the adventurers being unable to contribute the requisite amount for carrying out the new workings, the adventurers have been compelled to offer the entire mine for sale. Its position and contiguity to the several mines referred to, offers a fair inducement to speculators.

Any information that may be desired will be furnished by the agents at the mine, who will show the workings, and the conditions of sale may be inspected prior to the auction, and any further particulars had on application at the offices of Messrs. John Rodd and Darke, solicitors, Penzance, Cornwall.

Dated Dec. 26, 1849.

IMPORTANT AND EXTENSIVE SALE OF RAILWAY PLANT,
Including STEAM-ENGINES, EARTH WAGGONS, IRON RAILS, MEMEL TIMBER, DEALS, BATTENS, FOREIGN and ENGLISH TIMBER SLEEPERS, on the Manchester, Sheffield, and Lincolnshire Railway, at GAINSBOROUGH.

MR. G. O. BROWN is honoured with instructions from Messrs. Stephenson, to OFFER for UNRESERVED COMPETITION, on Tuesday and Wednesday, the 15th and 16th days of January, 1850; on Tuesday, the whole of their various MATERIALS, in their yard and premises at Spittal-road Bridge, near the Gainsborough Railway Station; and on Wednesday, at the River Trent Bridge, near Gainsborough, the remaining portion of their extensive stock of

RAILWAY PLANT,

Which will include 2 6-horse high-pressure (Gough's patent) PORTABLE ENGINES, with bell crank, &c., on cast-iron bedplate, 7 feet 6 inches by 4 feet 6½ inches; cylinders 7 inches diameter, stroke 20 inches; boiler 7 feet long by 4 feet 4 inches diameter; fly-wheel 7 feet diameter, with 14 tubes in boiler 4½ inches diameter—one fitted with double-headed 12-inch working barrel, and the other with three drums and clutch boxes, with wrought-iron shafting to work three pile engines, together with 1 12-inch pump, 90 feet long, and 1 14-inch pump, 27 feet long; 5 double purchase and 4 single ditto crabs, 1 double purchase crane, nearly new, a large quantity of crane chains, ½ inch to 1½ inch, a new 6-inch rope, 90 feet long, 6 sets of 2 and 3 sheave blocks, 1 PILE ENGINE and 1 RINGING ENGINE, with two rams, 20 cwts. each, and 1 ram, 15 cwts., several small carriages for crabs, with wheels complete, 6 sets of double-flanged wheels, with wheel and pinion for travelling frames. 1 millwright's lathe, a saw mill, with saw bench, circular saw and spindle, 4 screw jacks, 3 hearths of smiths' tools, complete, with bellows, anvils, vices, tongs, hammers, swages, &c., 1 set of taps and dies, complete, 2 sets of castings for travelling frames.

TWO LARGE BARGES, or TRENT LIGHTERS—open boats, in good repair, and good lighters.

About 3000 feet of MEMEL TIMBER, in various sizes.
6000 feet of 3 and 4-inch MEMEL PLANKING.
4000 LARCH and MEMEL SLEEPERS, 8 ft. 6 in. long and upwards.
500 2½ and 3 yards EARTH WAGGONS.
500 tons (and upwards) of temporary IRON RAILS, about 43 lbs. per yard.

The whole of the BUILDING MATERIALS, contained in the cottage, office, and workshops, near the Trent Bridge; also office fixtures and furniture, joiners' work benches, letter press, office desk, stools, &c. Also, a large quantity of good LARCH and MEMEL SLEEPERS, 8 ft. 6 in. and upwards long, 4½ in. by 9 in., and 5 in. by 10 in., suitable for colliery or other roads, and which are now laying near Kirton, Hibaldston, and Brigg.

TUESDAY'S SALE, at the Spittal-road Yard, amongst other things, will embrace EARTH WAGGONS, TEMPORARY RAILS, LARCH, MEMEL, and other SLEEPERS, a portable travelling crane, a small warehouse crane, a quantity of 1¼-inch square bar-iron, several tons of new iron, of various sizes, including nail-rods, bar and hoop iron; 1 pair of smiths' bellows, smiths' tools, swages, block, bench, and vice; a quantity of chains, of various sizes, 4 large pulleys, 3 ft. 6 in. diameter, and 2 pulleys, 20 in. diameter, 1 pair of mitre wheels, 2 ft. 10 in. diameter, 2½-inch pitch, with 20 lineal feet of cast-iron shafting, and 2 large plummer blocks, 4 setts of 12-inch diameter wheels and axles, 3 ft. 4 in. gauge.

1 pair of FRENCH BURR MILL-STONES, 4 ft. 4 in. diameter, with spindle, brass step, and bracket; 1 single purchase crab, 6-inch metal pump, 30 feet long, 5 small hand pumps, a large quantity of larch and other timber, barrows, and planks, 2 broad wheeled carts, 2 3-wheeled carts, 4 strong timber carriages, weighing machine and weights, small truck, several sets of cart harness, a large quantity of fly tools, picks, and hammers, a sugar mill, coffee mill, and various utensils belonging to the grocery trade, a valuable office desk, with 11 large drawers, 1 smaller desk, with office stools, fender and fire irons, and a great variety of other articles too numerous to particularise.

The sale will commence each day at Ten o'clock precisely.

Masborough, Dec. 22, 1849.

IMPORTANT SALE OF PILCHARD SEANS, SHARES IN VESSELS AND MINES, AT PENZANCE, CORNWALL.

MESSRS. GEO. H. BELLRINGER & WM. RICHARDS, will SELL, BY AUCTION (unless previously disposed of by PRIVATE CONTRACT), on Tuesday, the 22d day of January next, by Two o'clock in the afternoon, at Ball's Union Hotel, in PENZANCE, in such lots as may suit the convenience of purchasers, SHARES in the following

PILCHARD FISHERIES: viz.—

30-100ths in the BATTEN FISHING CO., at St. Ives, consisting of 7 Seans and 10 Boats.
40-100ths in the ALLIANCE FISHING CO., at St. Ives, with the like number of Seans and Boats.
25-100ths in the RUTH FISHING CO., at St. Ives, with like number of Seans and Boats.
24-64ths in the HAPPY RETURN FISHING CO., at Newlyn, near Penzance, with the Seans and Boats belonging thereto.
10-64ths in the ATLANTIC FISHING CO., at Newlyn.

The Pilchard Fishery at St. Ives is one of the most prosperous concerns in the West of England; the catches of fish of late years have been from 10,000 to 20,000 hgds. annually.

VESSELS.

8-64th shares in the newly-built Barque, SHANNON, of this port, William Semmens Daves, Master, 500 tons burthen, now on a voyage in the Mediterrean.
9-64th shares in the Brigantine, SCOTIA, of this port, James Daves, Master, 170 tons burthen, now on a voyage to Naples.
2-64th shares in the Schooner, VENUS, of this port, George Bawden, Master, 180 tons burthen, a regular trader between Penzance and Wales.
32-64th shares in the Schooner, ANN, of this port, Philip Johns, Master, 96 tons burthen, a constant trader between Penzance and Wales.
16-64th shares in the Schooner, CHARLOTTE ANN, of this port, James Cockburn, Master, 120 tons burthen, now in the Mediterranean, bound home.

MINES.

Shares in the following valuable and productive Mines, with the Tin, Tinstuff, Copper and other ores, Engines, Whims, Tools, Tackle, and other materials, property, and effects thereunto belonging: viz.—

8-100th shares in BOTALLACK, in the parish of St. Just, in Penwith.
15-160th shares in LEVANT, in the parish of St. Just.
252-672d shares in DING DONG, in the parish of Madron.
39-124th shares in BOSWEDDEN, in the parish of St. Just.
7-40th shares in WHEAL OWLES, in the parish of St. Just.
6-40th shares in NANPEAN AND BOLLOWAL, in the said parish of St. Just.
20-120th shares in WHEAL REETH, in the parish of Uny Lelant.
8-94th shares in BALNOON CONSOLS, in the said parish of Uny Lelant.
4-128th shares in HAWKE'S POINT, in the said parish of Uny Lelant.
2-119th shares in GREAT WORK CONSOLS, in the parish of Breage and Germoe.
1-96th share in WHEAL VOR Consolidated Mines, in the said parish of Breage.
8-128th shares in BUDNICK CONSOLS, in the parish of Perranzabuloe, near St. Agnes.

Full particulars of the various lots in which the Fisheries, Shipping, and Mine Shares will be put up to Auction may be obtained in a printed Catalogue, to be had of the Auctioneers, at Penzance; and also of Messrs. Rowe & Son, printers, Penzance; Mrs. Heard and Sons, printers, Truro; Mr. Carlyon, printer, Helston; Mr. Dixon, printer, Falmouth; Mr. Drew, printer, St. Austell; Mr. Richard Esterbrook, printer, Liskeard; and at the office of the *Mining Journal*, 26, Fleet-street, London; and all further particulars may be had on application to the Auctioneers; or to Messrs. John, Rodd, and Darke, solicitors, Penzance.—Dated Penzance, December 26, 1849.

EXTENSIVE IRON-WORKS FOR SALE, BY PRIVATE BARGAIN.—The BLAIR IRON-WORKS, belonging to the Ayrshire Iron Company, with the whole MINERAL FIELDS held by the said company, under favourable leases, including the MALLEABLE IRON-WORKS, immediately adjoining, so far as erected—all as particularly described in former advertisements.—There is a large STOCK of IRONSTONE on the ground, which may be had at a valuation.

For further particulars apply to Mr. Biggart, at the works; Mr. Watson, 32, and Mr. Brown, 35, St. Vincent-place, Glasgow; Messrs. M'Clelland and M'Kenzie, accountants, there; Messrs. Gibson-Craig, Dalziel, and Brodie, W.S., Edinburgh; or Messrs. Montgomerie and Fleming, writers, Glasgow—the last being in possession of the title deeds and articles of roup.—Glasgow, Dec. 4, 1849.

NEW PATENT LOCOMOTIVE ENGINE.—TO RAILWAY COMPANIES.

MESSRS. HARDWICK will SELL, BY AUCTION, at the Leeds Terminus of the North Midland Railway, Hunslet-lane, Leeds, that celebrated PATENT NEW LOCOMOTIVE ENGINE and TENDER, known as the

SANSPAREIL,

manufactured by Mr. Timothy Hackworth, Soho Engine Works, Sheldon, near Darlington. It will be recollected that this locomotive engine was noticed by a correspondent of the *Mining Journal*, Sept. 15th, 29th, and October 13th, 1849, on account of her great economy in fuel, speed, and power, combined with a superiority of design and unequalled workmanship. The engine belongs to the kind called first-class coaching engine; the cylinders are inside of the smoke-box, working to a crank-shaft, the bearings of which are carried by an inner frame, formed of a wrought-iron slab, varying from 1¼-inch thick at the fire box end to ¾-inch at the smoke-box; she is carried on six entire malleable iron round spoked wheels, driving wheels 6 feet 6 inches diameter, leading and trailing wheels 4 feet diameter, 13 ft. 6 in. centre and centre, and having their bearings in the outer frame, which, together with the axle guards, is formed of a wrought-iron plate 1 inch thick. The boiler is a novelty in its manufacture, being made of bowling-plates, welded together with solid angle irons for joining to fire-box and smoke box. It contains 221 brass tubes, 10 feet 7 inches long, 2 inches external diameter, with copper fire-box. Total amount of heating surface about 1300 feet; diameter of cylinder 15 inches, stroke 22 inches; weight, with the steam up, 23 tons 15 cwts.

The water tank is carried on six entire malleable iron round-spoked wheels, 3 ft. 6 in diameter, contains upwards of 1500 gallons of water, and is provided with a powerful rack and pinion screw brake, capable of locking all six wheels; the outer frame is of malleable iron, 1 in. thick, with the axle guards in one piece with the frame plate. We can say, without fear of contradiction, that this locomotive engine is the most economical extant. After a course of careful experiments on the York, Newcastle, and Berwick Railway, also on the Midland Counties, it has been proved that the amount of saving effected, at the lowest estimate, is 25 per cent. below the best engines of the present day. This great economy is effected by a new modification of the slide valves, which the manufacturer has recently secured by letters patent.

This locomotive engine evinces superiority in design and general construction, with considerable finish in the manufacture, which, together with the great economy exhibited in the consumption of fuel, and the celebrity she has attained on those railways on which she has experimented, combined with the high character of the manufacturer, as one of the earliest engineers, whose long standing and extensive experience in the construction and manufacture of locomotive engines, cannot fail to recommend her as a desirable purchase to any railway company.

The sale will commence at 12 o'clock at noon, on Thursday, the 17th day of January, 1850. A person will be in attendance on Tuesday, Wednesday, and Thursday, the 15th, 16th, and 17th of January, who will show the engine, and give further information.

Soho Works, Sheldon, near Darlington, December 27, 1849.

SUNDERLAND DOCKS.

SALE OF STEAM-ENGINES, &c., by PRIVATE CONTRACT.
TO ENGINEERS, RAILWAY CONTRACTORS, COLLIERY OWNERS, &c.

MESSRS. JOHN CRAVEN & CO., in consequence of the completion of the works of the Sunderland Docks, have for SALE the following

ENGINES, &c.:—

1. ONE HIGH-PRESSURE PUMPING ENGINE, 40-horse power, with two boilers, 25 feet long by 5 feet 6 inches diameter; also four sets of pumps, 20 inches diameter.
2. ONE HIGH-PRESSURE ENGINE, for pumping and winding, 45-horse power, with three boilers, 30 feet long by 5 feet 6 inches diameter; also two sets of pumps, 24 inches diameter, and gearing and drum, &c., for winding.
3. ONE HIGH-PRESSURE WINDING ENGINE, 12-horse power, with one boiler, 21 ft. long by 4 ft. 6 in. diameter, with gearing and drum, &c., for winding.
4. TWO HIGH-PRESSURE PORTABLE ENGINES, by Gough, each 8-horse power.
5. ONE HIGH-PRESSURE PORTABLE ENGINE, by Gough, 6-horse power.
6. TWO HIGH-PRESSURE PORTABLE ENGINES, 10-horse power each, with tubed boilers.
7. A large quantity of EARTH WAGGONS, TEMPORARY RAILS, SLEEPERS, and OTHER MATERIALS suitable for carrying on public works generally.

For furt her particulars apply to Messrs. John Craven & Sons, contractors, Sunderland

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IN THE MATTER OF JAMES KNIGHT, AN INSOLVENT DEBTOR.

TO BE SOLD, the INSOLVENT'S INTEREST in an agreement from John Taylor, Esq., of Roose, for a lease for 21 years of the LANEAST CONSOLS VANDYKE BROWN UMBER and MANGANESE WORKS, together with all other MINERALS in and under the LESSOR'S ESTATE, in the parish of LANEAST, CORNWALL, subject to 1-15th royalty, and to all usual covenants.

For particulars, and to treat for the same, application to be made to Robert Cole, Esq., solicitor to the assignee, 14, Tokenhouse-yard, London.

TO COAL AND IRONMASTERS.—The PROPRIETOR of an extensive range of several SEAMS of very superior COALS, on the borders of DERBYSHIRE, with the most favourable means of transit to the best market in the realm, both by railway and canal, each within a few hundred yards, is now prepared to LEASE the SAME on favourable terms. The above will be found most desirable, as a sufficient market already exists for an immense quantity of them.—Also, an EXTENSIVE RANGE of IRONSTONE may BE LET with the SAME, if desirable.

For particulars of the same, application may be made to "R. C.," at the office of the *Mining Journal*, 26, Fleet-street, London.

SEA SALE COLLIERY TO BE LET, and ENTERED at MAY next—All that valuable and CURRENT-GOING COLLIERY, situated on the SOUTH BANK of the TYNE, at JARROW, in the county of Durham, containing the BENSHAM and LOW MAIN SEAMS of COAL in great perfection. The colliery is fitted up on the most improved manner, and may be undertaken with a very moderate capital.—For particulars apply to Mr. Matthias Dunn, colliery viewer, Newcastle-on-Tyne, or to Mr. Matthew Liddell, viewer, Benton Grange.

Newcastle-on-Tyne, Dec. 26, 1849.

JOSEPH DEELEY, of the LONDON and NEWPORT IRON-WORKS, NEWPORT, MONMOUTHSHIRE, respectfully recommends to the notice of the public his PATENT FOUNDRY FURNACE, which has been effectually tested, and is now in constant use at the above works, where it may be seen by all persons interested. This furnace operates without the aid of any motive-power to impel the air. An immense saving is the consequence, both in erecting and working. One-third of the coke usually consumed is more than sufficient; a loss of only 22 lbs. of iron to the ton is sustained in smelting. It is also available for large or small work of every description, and may be tapped out as required.

The IRON MELTED in this furnace also undergoes an extraordinary improvement in quality.

SCOTCH PIG and SCRAP are returned equal to cold-blast in point of strength, and capable of being chipped or filed with the greatest facility.

FOUNDRIES USING this FURNACE may exist in the most densely populated cities, without causing the least nuisance—all smoke, dust, and noise being avoided.

The Continental, Colonial, Scotch, and Irish PATENT RIGHTS are for disposal; the Patentee would also treat for the purchase of Patent Rights, or Grant Licenses to manufacture for certain counties or districts in England or Wales.

APPLY TO THE PATENTEE AS ABOVE.

CERRO DEL BOTE MINING COMPANY.

(Provisionally Registered under 7 and 8 Victoria, cap. 110.)

Capital £50,000, in 5000 shares, of £10 each, payable in four instalments.

The object of this company is to PROSECUTE and EXTEND the WORKS in the valuable SILVER MINES of the CERRO DEL BOTE, in the State of ZACATECAS, MEXICO, the drainage of which, by steam-power, being now completely established and effectual, the capital will be devoted to works of discovery and opening fresh ground—the present extraction of ores paying every other expense of the mine.

Prospectuses and every information can be obtained at the office of the company, No. 13, Austinfriars; or at that of John Taylor, jun., Esq., No. 6, Queen-street-place, Upper Thames-street—at either of which places applications for shares (addressed to the committee) may be made.

CERRO DEL BOTE MINING COMPANY.—PERSONS desirous of TAKING SHARES in this COMPANY are requested to make early application, as the subscription list will shortly be closed.

WEST POLGOOTH TIN MINING COMPANY.

Capital £12500, in 2500 shares, of £5 each.

CONDUCTED ON THE COST-BOOK SYSTEM.

Deposit £1 per share.

OFFICES, 15, OLD BROAD-STREET.

This valuable MINERAL PROPERTY is that portion of the unworked ore ground in a line between the Great Hewas and the Great Polgooth Mines: in extent it is about three-quarters of a mile on the course of the lodes, and its mean breadth half a mile—held under a lease of 21 years from Lord Mount Edgecombe, at 1-18th dues. The Hewas Mine returned from one lode the greatest quantity of tin in the time of any mine in the kingdom. Polgooth is now making at a large profit, returns of nearly £3000 per month; both these mines are more than 110 fathoms deep. West Polgooth Mine is only down 34 fathoms—consequently there remains above 70 fathoms of virgin ore ground for the present company to return before they reach the level of the adjoining mines, and which is computed to be sufficient to employ 800 persons for 20 years to come. The tin is of a very fine quality, and with an outlay of £6000, 35 tons of tin per month may be returned, yielding a profit of 25 per cent.

The management is by a London committee, and the works on the mine prosecuted at the lowest possible cost.

A prospectus, with lithograph plan and section attached, may be had by applying to Mr. Robert Williams, the purser, at Mr. Richardson's offices, 15, Old Broad-street, where the Cost-book, containing the names of the directors, the rules, reports, specimens, working plans, &c., may be seen, and of whom full particulars may be known.

Only 820 shares more are to be issued, and which will be open to the public till the 20th of January ensuing.

STEAM-ENGINE FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, a 33-inch CYLINDER STEAM-ENGINE, 8 feet stroke, equal beam, with Steam Case, Brass Air Pump, Boiler and Connections, and Capstan and Shears.—Application to be made to Mr. F. Pryor, Bell Cottage, Redruth.

Dated January 2, 1850.

STEAM-ENGINE FOR SALE, 50-horse power, low pressure, working expansively, with boiler. Diameter of cylinder, 40 inches; stroke 4 feet; length of beam, 14 feet 6 inches; fly-wheel diameter, 14 feet; wrought-iron rods; boiler cylindrical, best made. The engine is well adapted for iron or other works, and is economically used.—For terms, apply to E. J. Payne, Esq., 2, Bennett's-Hill, Birmingham.

TO CAPITALISTS—SEVERAL ADVANTAGEOUS INVESTMENTS.—For particulars apply by letter, from principals only, to David Mushet, Esq., care of Messrs. J. and W. Meymott, solicitors, No. 86, Blackfriars-road, London.

A GENTLEMAN wishes to make the ACQUAINTANCE of any PROPRIETOR of MINES, now in work, to whom any sum, not exceeding £20,000, would be useful in EXTENDING the OPERATIONS of the Mine, or in the more EFFECTUAL WORKING of the same.—Apply (post paid), with full particulars, to "B. R.," 9, Guildford-street, Russell-square, London.

A COMMISSION AGENT at WOLVERHAMPTON, with a first-rate CONNECTION amongst MERCHANTS and FACTORS, having a good MARKET for the SALE of COKE TIN-PLATES, is desirous of OBTAINING a COMMISSION for THEIR SALE, from some respectable manufacturer.—Address to "B. B.," Post-office, Wolverhampton.

CAMBORNE CONSOLS COPPER MINES, CAMBORNE, CORNWALL.—OFFICES REMOVED to No. 22, NEW BRIDGE-STREET, BLACKFRIARS.—London, Dec. 22, 1849. H. L. T. VON USTER, Secretary.

COURT GRANGE SILVER-LEAD MINES, CARDIGANSHIRE.—OFFICES REMOVED to No 22, NEW-BRIDGE-STREET, BLACKFRIARS.—London, Dec. 22, 1849. H. L. T. VON USTER, Secretary.

MR. EVAN HOPKINS, C.E., F.G.S., &c, CONSULTING MINING ENGINEER,

BARRINGTON-ROAD, BRIXTON, AND 13, AUSTINFRIARS, CITY.

MINING SHAREHOLDERS, and those who intend to INVEST their CAPITAL in MINES, requiring PERIODICAL ADVICE for their government, SURVEYING and INSPECTION of any description of MINERAL PROPERTY, may make an ANNUAL ARRANGEMENT, on moderate terms, on application (by letter) to Mr. HOPKINS.

MINE CAPTAINS and MINING ENGINEERS receive INSTRUCTION "How to Observe Mineral Property," as usual, by letter.

N.B.—All communications considered as private and confidential.

*** I beg to return my thanks for the very kind expressions of confidence conveyed to me in the letters of those who have been guided by my advice during last year in England and on the continent, and the important benefit derived therefrom. I trust it will continue to prove equally beneficial to all legitimate mines and miners.

MR. T. A. READWIN, MINING OFFICES, 2, *WINCHESTER-BUILDINGS, OLD BROAD-STREET, LONDON.*

MR. H. B. RYE, has BUSINESS to transact, both as BUYER and SELLER in all the leading MINES in Cornwall, Devon, and Wales. For particulars, apply at his office, 77, Old Broad-street, City.

MR. C. S. RICHARDSON, CIVIL ENGINEER, LAND AND MINING SURVEYOR,

No. 15, OLD BROAD-STREET, LONDON.

MR. GEORGE BATE, Jun., CIVIL ENGINEER AND SURVEYOR, *WOLVERHAMPTON.*

Offices in Queen-street, corner of Piper's-row.

N.B.—UNDERGROUND MINING SURVEYS accurately executed.

JAMES LANE, MINING SHARE DEALER, 80, *OLD BROAD-STREET, LONDON.*

ANGLO-MEXICAN MINT OFFICE, 5, Broad-street-buildings, 28th December, 1849.—NOTICE.—A SPECIAL GENERAL MEETING of shareholders in this company will be HELD at the office, as above, on Tuesday, the 8th day of January next, for the purpose of declaring a dividend on the shares of the said company.—The chair to be taken at One o'clock precisely.

G. B. LONSDALE, Secretary.

CALLINGTON MINES COMPANY.—At a Quarterly General Meeting of the Shareholders, held at the offices, Salvador-house, London, on Wednesday, the 2d inst., the following Resolutions were passed unanimously:—

That the Reports and Accounts now submitted be received, adopted, and entered in the Company's Cost and Transfer-book.

That the Thanks of this Meeting be presented to the Directors for their management of the Company's property.

CONSOLIDATED COPPER MINES OF COBRE ASSOCIATION.—Notice is hereby given, that a HALF-YEARLY GENERAL MEETING of the Proprietors of this Association will be HELD, in conformity with the Deed of Settlement, at the offices of the Company, 26, Austinfriars, on Tuesday, the 8th day of January, at One o'clock precisely.

On that day two directors—viz., Russell Ellice and Walter Shairp, Esqrs., and one Auditor, Alexander Druce, Esq., will go out of office by rotation, agreeably to the Deed of Settlement, but are immediately re-eligible, and are candidates for re-election.

It is necessary that persons intending to offer themselves as candidates for the direction and auditorship should leave notice of such their intention with the secretary, at the office of the company, 26, Austinfriars, at least 14 clear days before the day of election.

Notice is also hereby given, that a Special General Meeting of the Proprietors of this Company will be held immediately after the preceding Half-yearly General Meeting, to authorise an alteration being made in the Company's Deed of Settlement, by increasing the present amount of the reserved fund, such increase to be effected by an addition of 5 per cent. on the amount of each dividend that may then and subsequently be declared.

By order of the Court of Directors,

26, Austinfriars, Dec. 19, 1849. WILLIAM LECKIE, Secretary.

KESWICK MINING COMPANY.—The directors of the KESWICK MINING COMPANY hereby give Notice, that, in consequence of a resolution unanimously passed, at the last General Meeting, all Share Certificates have been called in, and that NO LEGAL TRANSFER can be made, but by entry in the Cost-book.—8, Walbrook, Dec. 22, 1849.

KINZIGTHAL MINING ASSOCIATION.—NOTICE OF CALL.—Notice is hereby given, that the directors of the KINZIGTHAL MINING ASSOCIATION have this day made a CALL of FIVE SHILLINGS, or Three Florins, per share, and have appointed such call to be PAID on or before Monday, the 21st of January, 1850, to their bankers—viz.:

In LONDON—Messrs. Masterman, Peters, and Co.
In STUTTGARD—Messrs. Doertenbach and Co.

By the Statutes of the Association interest, at the rate of 5 per cent. per annum, will be charged upon all sums in arrear after the 21st of January, 1850.

By order of the board, GEO. COPELAND CAPPER, Sec.

1, Adelaide-place, London-bridge, Dec. 15, 1849.

UNITED MEXICAN MINING ASSOCIATION.—Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of proprietors of this association will be HELD at the office of the company, No. 5, Finsbury-circus, on Wednesday, the 30th day of January next, at One o'clock precisely, when the directors will recommend the PAYMENT of a DIVIDEND, at the rate of SEVEN SHILLINGS and SIXPENCE per share, PAYABLE on and after the 1st day of February, 1850, between the hours of Eleven and Three.

Forms for claiming the dividend to be obtained at the company's office, and must be left two clear days for examination previous to payment. Also the election of a director, in lieu of James Nelson Shoolbred, Esq., the present manager of the association in Mexico, will take place. Candidate—Henry Bunster, Esq., Exchequer Bill Loan Office, South Sea House, one of the present auditors.

The transfer book will, as usual, be closed on the evening of the 12th, and re-opened on the 31st of January. By order of a court of directors,

No. 5, Finsbury-circus, London, Dec. 27, 1849. JOHN MATHER, Secretary.

WHEAL MAY SILVER AND COPPER MINE.—Notice is hereby given, that a GENERAL MEETING of the shareholders will be HELD on Monday, the 7th of January, at 12 o'clock, at the offices of the company, 15, Old Broad-street. CHAS. SAM. RICHARDSON, Secretary.

TOUGHENED CAST-IRON—STIRLING'S PATENT

No. 1—For SMALL and MEDIUM CASTINGS.
No. 3—For HEAVY CASTINGS.
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CALIFORNIA.—The accounts from California, relative to the production of gold, do not differ materially from those received by previous steamers. It is estimated that there were about 80,000 people among the mines, most of whom were digging with more or less success. The average product per head is set down at $5; but even that small sum is too high, judging from the comparatively limited shipments of gold-dust. The exportation of gold-dust from San Francisco has not averaged thus far (Nov. 2, 1849) more than half a million per month, as far as we can judge, by the most authentic returns received; and it appears to us that, if the average product was as large as reported, the shipments would have been to a much greater extent; 80,000 miners, at an average of even $1 per day, would produce more than $2,000,000 per month; and, at an average of $5 per day, would give an aggregate of $12,000,000 per month. The statements, therefore, relative to the production, must be very much exaggerated, or else the gold remains in the hands of the diggers. We have no doubt that large amounts of gold are hoarded by the miners; but we do not believe that the quantity mined is anything like that which the reported average product per head would come to. It is estimated that about 500 vessels had, up to the 1st Nov., arrived at San Francisco from the United States and Europe, and that at least 100,000 people were at that time in California. The average cost of outfit for each person cannot be less than $200, which makes an aggregate of $20,000,000. It will cost an average of at least $300 per annum for each to live; this amounts to $30,000,000. This makes a total of $50,000,000 for the bare outfit and provisions for one year. The 500 vessels which had arrived at the latest date, and the 500 on the way, are worth, on an average, about $10,000 each, which amounts to $10,000,000. The time of each individual we estimate to be worth, on an average, $200; total, $20,000,000. Grand total of outfit, cost of living one year, cost of vessels engaged in the trade, and value of time one year, $80,000,000. This is a moderate calculation, as the actual outlay and absorption of capital, up to this time, will probably amount to fully $100,000,000. As an offset to this, we have thus far received about $6,000,000 in gold-dust from California and the whole Pacific coast. It will be perceived that there is still an enormous balance against California, and that it will be a long time, at the rate already realised, before we shall receive even the sum expended, to say nothing about profits. It is our impression that most of those engaged in the trade would be satisfied with merely the cost of their shipments. Most of them have abandoned all idea of profits, and many of them will never realise a cent: the charges, such as freight, storage, &c., will eat up every mill of first cost.—*New York Herald.*

VISIT OF THE BRITISH ASSOCIATION TO ICELAND.—Dr. Daubeney, Professor of Chemistry at Oxford, states in the *Guardian*, that a steamer is to start from Leith about two months before the next meeting of the British Association, for the purpose of carrying out a scientific expedition to explore the geology of Iceland. It is arranged that the voyagers shall return in time to communicate the result of their observations and discoveries to the congress in Edinburgh.

We are informed that the remains of a fossilised forest have been discovered beneath the mud deposit in Wallasey-pool. It will be remembered that previously the decayed trunks of trees were found between the Pool and Leasowe; but this later discovery is of a much more interesting character in every respect.—*Liverpool Albion.*

PARIS AND ROUEN RAILWAY.—It is proposed, at the next meeting of the proprietors, to introduce modifications in the statutes relative to the regulation of the sinking fund.

ON NERVOUS DEBILITY AND GENERATIVE DISEASES.

Just published, the fortieth thousand, an improved edition, revised and corrected, 120 pages, price 2s., in a sealed envelope, or forwarded, post-paid, by the Author, to any address, secure from observation, for 2s. 6d., in postage stamps, illustrated with numerous anatomical coloured engravings, &c.

MANHOOD: the CAUSES of its PREMATURE DECLINE, with plain directions for its perfect restoration. A Medical Essay on those diseases of the Generative Organs, emanating from solitary and sedentary habits, indiscriminate excesses, the effects of climate, and infection, &c., addressed to the sufferer in youth, manhood, and old age; with practical remarks on marriage, the treatment and cure of nervous and mental debility, impotency, syphilis, and other urino genital diseases, by which even the most shattered constitution may be restored, and reach the full period of life allotted to man. The whole illustrated with numerous anatomical engravings on steel, in colour, explaining the various functions, secretions, and structures of the reproductive organs in health and disease; with instructions for private correspondence, cases, &c.—By J. L. CURTIS, consulting surgeon, 15, Albermarle-street, Piccadilly, London.

REVIEWS OF THE WORK.

We feel no hesitation in saying, that there is no member of society by whom the book will not be found useful—whether such person hold the relation of a parent, preceptor, or a clergyman.—*Sun*, Evening Paper.

J. L. Curtis, *On Manhood, and the Causes of its Premature Decline; with Plain Directions for its Perfect Restoration.*—[Strange, Paternoster-row.]—This is a book replete with valuable advice and information. It developes the fearful shoals on which a large proportion of human happiness is wrecked, and furnishes a chart by which they may be avoided and escaped. Fortunate for a country would it be, did its youth put into practice the philanthropic and scientific maxims here laid down. One cause of matrimonial misery might then be banished from our land, and the race of the enervate be succeeded by a renewal of the hardy vigorous spirits of the olden time.—*United Kingdom Magazine.*

Manhood: by J. L. Curtis and Co.—Their long experience and reputation in the treatment of these painful diseases is the patient's guarantee, and well deserves for the work its immense circulation.—*Era.*

Manhood: a medical work.—To the gay and thoughtless we trust this little work will serve as a beacon to warn them of the danger attendant upon the too rash indulgence of their passions—whilst to some it may serve as a monitor in the hour of temptation, and to the afflicted as a sure guide to health.—*Chronicle.*

Published by the author, and may be had at his residence; sold also by Strange, 21, Paternoster-row, London; Heywood, Oldham-street, Manchester; Howell, 16, Church-street, Liverpool; Robinson, 11, Greenside-street, Edinburgh; Campbell, chemist, 146, Argyle-street, Glasgow; Berry and Co., Capel-street, Dublin; and by all booksellers.

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BRITISH MINING INTERESTS.

TESTIMONIAL TO Mr. J. B. SHARP, OF LONDON.

The APPEAL of the Committee for promoting the Testimonial to Mr. Sharp for his long and arduous services to the Mining Interest, in opposing the removal of all protection from Copper and Lead, and their ores, proposed and effected by the "COPPER AND LEAD DUTIES' BILL" of the Session of 1848, having already appeared in a detailed shape in the columns of the *Mining Journal*, they renew their Address, to those who were interested in the question, in the shape, and on the grounds, here set forth.

From February, 1849—in full concurrence with the County Members, and the Committee appointed in Cornwall, and at their request—Mr. Sharp prepared, with great labour and expense, at home and abroad, all the information and documents necessary for the successful establishment of the case of the British Copper and Lead Miners, before a Select Committee of the House of Commons, which it was determined should be asked for.

When, in April, a motion for the Select Committee was opposed and negatived, at the instance of Ministers, on grounds alike frivolous and false, the opposition was still more resolutely persevered in; and was continued, without intermission, under Mr. Sharp's individual organization, to the very last day of the Session; when, by means discreditable to Government, disrespectful to both branches of the Legislature, and unjust to the British miner, the Bill was carried, and became law.

During the whole of that long Session, and for a period of nearly seven months, did Mr. Sharp, without the smallest interest in any mining property in existence, apply himself exclusively, and in the most indefatigable manner, by day and by night, and to the injury of his health, to the protection and support of the interests of the British Copper and Lead Miner; whilst every shilling of the expense incurred in London, in conducting that protracted struggle, was paid by himself; and at the end of considerably more than a year after its termination, Mr. Sharp not only found himself wholly unremunerated for the occupation of his time, and his severe labours—which it was quite understood that he would be—but he was not even reimbursed the amount of his money advances.

It is upon these grounds that the Committee urge upon all interested, in whatever way, in the welfare of mining properties, the performance of a mere act of justice to one, who has ever, through a long life, proved himself a most able, consistent, and unflinching supporter of Native Industry, whether Mining, Agricultural, Shipping, or Colonial; and especially of that branch connected with the metallic resources of the country.

Amounts already subscribed.

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Communications may be addressed to the *Honorary Secretary*, Mr. ROBERT NEALE, 4, Red Lion-square, Bloomsbury, London.

The "East Shepherd" Ode.

(AFTER WOLFE.)

No lead have we got, nor "flookan," nor ore,
Which long in the earth lay buried;
No metal is found, though we "drive" all the more,
And from level to level have hurried.

Slowly and sadly the meetings disperse,
Each adventurer fraught with sorrow;
For "twelve inches good work" of lead one day,
Had vanished from sight by the morrow.

Lightly they'll talk of Martin the Grand,
And when he's away they'll upbraid him;
But nothing he'll reck, for eight guineas a month,
To do as he likes, they have paid him.

Vainly they'll call to the spirit that's gone—
Where art thou, O Dousterswivel?
By the struggling moonbeam's misty light,
Art thou brewing afresh some evil?

And vainly they'll speak of that bland little man,
Who of "rocks" told the dulcet story,
Who forgot to discharge his farewell shot,
'Ere he left us alone in our glory!

Manchester, Jan. 1, 1850. A. STAG.

[From the *Plymouth Journal.*]

NEW ADVENTURES.—We understand that several very promising mining setts in our immediate neighbourhood have been taken up by some spirited parties during the past month, in some of which a great portion of the shares have been already subscribed for. Among others is the extensive sett in which the very rich lode of silver and lead was discovered in cutting for the new Tamerton-road, in the Whitleigh estate, the property of —— Gennys, Esq.; and another sett adjoining, is also being brought out, more than one-half of the shares having been already taken up. The workings of the "Bottle-hill" tin and copper mine, from which more than 100,000*l.* worth of ore was sold by the late adventurers, are also likely to be resumed under a local management. The prospectuses, we hear, will be before the pubic in a few days; another tin sett to the west of this mine, and one on the opposite side at Hemerdon, have also been taken up. There are many advantages connected with these mines, the Plympton station of the South Devon Railway being only two miles distant. We have no doubt that Plympton was made a stannary town by reason of the vast quantity of tin returned upon this locality by the ancients, whose operations were chiefly confined to the surface.

ASHBURTON UNITED.—An improvement has taken place in the pitches working on the western part of the mine. The company have received an advance on the price of their parcel of tin.

WHIDDON MINES.—The men are still extending the cross-cut north to intersect an important lode.

SOUTH PLAIN WOOD.—Two men have been continuing for the last week at this mine, formerly called the Holn Park Mine, and mining operations on an enlarged scale will be speedily commenced.

WAYE ALSTON.—The ground through which the adit is being driven still continues very favourable; the soft blue clay slate being often spotted with crystals of argentiferous lead ore.

GIDLEIGH MINES.—In the new adit driving from the river Teign to intersect No. 2 and 3 lodes, a branch has been cut, about 7 in. wide, and showing a good run of tin.

TAVISTOCK CONSOLS.—There has not been any sinking in the engine-shaft since the 20th Dec. The main part of the lode is on the north side of the shaft; we have only been carrying the south part of it, consequently I cannot say how large it is; it has a very kindly appearance, composed of mundic, peach, quartz, and tin. The lode in the adit level, east of the engine-shaft, is of a very promising character, composed principally of mundic and peach. We are carrying 3 ft. of the south part of the lode; how large the lode is we cannot say, as we have not got the north wall.

WHEAL FRANCO.—The lode in the 62 fathom level, west of the engine-shaft, is large, and produces good stones of ore. The lode in the same level east, is at present unproductive; the winze in the bottom of the 47 fm. level, east of shaft, is producing a little ore; other parts of the mine are much as usual.

PLYMOUTH WHEAL YEOLAND EAST.—At the general meeting held on Thursday last, it was resolved not to commence active operations until the spring, and Plymouth Wheal Yeoland had further developed her prospects.

ACCIDENTS.

Wolverhampton—Fatal Accident through Culpable Negligence.—As Martin Maycock, and a number of his fellow workmen had entered a skip for the purpose of going down to work, the usual signal was given for it to be raised, which was immediately done by the engineer, Joseph Griffiths; immediately, however, without waiting for a second signal from the banksman, he lowered the skip, which caught the side of the waggons, and Maycock was precipitated to the bottom. His skull was fractured, and life was extinct. The circumstance could not have occurred if Griffiths had waited for the signal that the mouth of the pit was clear. A verdict of "Manslaughter" was recorded.—*Wolver. Chron.*

Kingswinford—Fatal Colliery Explosion.—On Thursday morning last, the miners resumed their labours at the ordinary hour, after testing the workings of the pit with a safety-lamp, and pronouncing it safe. About an hour and a half afterwards, however, an explosion took place. All the lights were put out, and the men (several of whom are slightly injured) thrown down by the current. A boy named J. Burks was killed.

Bolton.—As J. Hurst was employed in one of the Earl of Bradford's mines, at Great Lever, with his son Joseph, and a man named Haslam, a lump of coal, about a ton weight, fell upon his back, and killed him instantaneously. The other two men very fortunately escaped.

FRANKLIN COXWORTHY'S DISCOVERIES IN NATURAL PHILOSOPHY.—No. XIII.

The increase of weight, with increase of specific gravity, by compression and contraction, having been disposed of in our last, we have now to state, that when we commenced these papers, it was with the intention of confining our observations to those points on which Franklin Coxworthy had already treated; but our attention having been directed to two facts in connexion with comparatively recent discoveries that appear to us to be subversive of the Newtonian doctrine of gravitation, we do not consider that our essays would be complete without special reference to them.

From the first of these facts, it may be deduced that matter is not invariably attracted towards the *centre* of the earth; it being only at the poles and at the equator that the direction of a falling body is precisely towards the earth's centre; for in our latitude it must be towards a point removed from the centre. At all times, however, the line of descent is at right angles with the horizon—a fact itself established by mathematical data, and about which no doubt has been raised.

At the poles, and at the equator, the horizon is at right angles with a line drawn to the centre of the earth; and, therefore, a falling body must, we assume, be necessarily under the direct influence of the opposite electrical condition of the centre of the earth and the upper regions, which is reconcileable to our belief that the so-termed gravitation is the effect of the negative condition of the centre of the earth, and the positively electrical condition of the upper regions. But, in the latitude of 45°, a line drawn from the surface to the centre of the earth is not at right angles with the horizon; whence it must follow that, although the falling body will be attracted by the negative condition of the earth's centre apparently towards that point, its descent being also influenced by the highly electrical condition of the upper regions (the direct force of which is always at right angles with the horizon) it must tend to divert the falling body from the accurately direct line of attraction towards the centre of the earth.

If, then, attraction of gravitation be referable to two equal forces, acting in the same direction, by parity of reasoning, in our latitude, where the atmospheric influence diverts the direction of the terrestrial line, the electrical influence of the earth should also divert the line of the horizon from its perpendicular. And hence we suspect that, if the *dicta* of the mathematician be sustained, it is clear that what we have been regarding hitherto as "attraction" must be "repulsion"—the electrical condition of the upper regions *alone* acting in the matter, the earth being neutral; to which latter proposition we are perfectly prepared to accede.

We have already shown those influences which were attributed to *heat* are referable to *cold*. It is not, therefore, improbable, that in ignorance of electrical condition, outward appearances in this question may have misled the astronomer.

The second fact is, that "attraction of gravitation" is greater at the poles of the earth than it is at the equator, as determined by the vibration of the pendulum. Our globe is not a perfectly spheriodal body, but what is termed an "oblate spheriod," of which the equatorial diameter exceeds the polar by 139,206 ft., or 23 geographical miles—a difference equal to more than nine times the height of Mont Blanc, or five times the height of the highest of the Himalaya chain.

We are not, however, with this illustrative aid, prepared to give so satisfactory a solution of the second as of the first fact, although, from there being less attraction where exists the greatest amount of matter, it may be consistently received as a proof equally subversive of the Newtonian doctrine. But if it be allowed that at the equator there is a greater thickness in the crust of the earth, and that, consequently, the attracted body has, interposed, a greater mass of non-conducting matter between it and the negative centre of attraction, the problem is at least partly solved, irrespective of the distance. The excess of temperature, also, at the equator, as compared with that at the poles, by reducing the electrical condition of the air, may have something to do with the question. And, under any circumstances, the entire subject is deserving of the serious consideration of the mathematician, as well as the natural philosopher, upon the assumption that "attraction of gravitation" is attributable to electrical condition, since we have now obviously lost "attraction of gravity."—S: *Chelt. Jour.*

ON THE CHANGE IN THE STRUCTURE OF IRON.—At the Liverpool Polytechnic Society, Mr. GRANTHAM made his promised exposition of the opinions of eminent engineers, and his own, on the change in the structure of iron in use as axles of railway carriages, the results, &c. He adduced a number of experiments made by Mr. Nasmyth, and concurred with that gentleman, that although the "cold-sweating" of iron might be proper in many cases, yet (for railway axles and the like) that safety might be secured by the metal, when finished from the hammer or the lathe, by proper annealing. It was also proper frequently to renew entirely the axles. After an interesting address, Mr. Grantham suggested that on any discussion that should arise, he might be allowed to embrace a wider scope than the peculiar department upon which he had touched.—Mr. HORNER (the former advocate for cast-iron girders for railway bridges, *where they could be judiciously applied*) then entered into a statistical account of the failures and falls of bridges of wrought-iron, brick, stone, wood, and other materials, with a view to show that no material was free from accident or fatality. He instanced many forms of girders of bridges, of cast and wrought-iron, giving their proportions. The cost of the wrought-iron girder was generally three times more than the cast-iron one. He was not of opinion that there was any danger in the rivets giving way, as had been supposed.—Mr. BAKER said, that the accidents on brick-bridges might be avoided with care, in the abutments, &c., and were not attributable to the material.—Mr. HORNER remarked upon air-holes and sand-holes.—Mr. S. PERKS said, he had had experience in cast-iron girders, and did not approve of trusting to them too far. He had known one cast to-day, and apparently sound, break of itself in the yard next day.—Mr. C. S. SMITH adduced the opinion of Mr. M'Connell and Mr. Robert Stephenson, C.E.; and this led to a further discussion of much interest, but we have no room for details.—Mr. GRANTHAM again spoke. He thought the iron must have been originally of the same texture which it presents when broken.—Mr. SMITH thought that the safe mode was to believe that a change did take place, and that it would be well to anneal all axles, so that they would retain their fibrous texture or tenacity.—After some further discussion, this subject was deferred to a future meeting.

BURNING WATER INSTEAD OF LAMP OIL.—The *New York Sun* has a letter from Worchester, Massachusetts, in which the writer claims to have invented and put in use an apparatus which separates the oxygen of which water is composed, and produces gases for lights. This it does at no other expense than that of the machinery, as no material but water is used. The water is decomposed by a current of electricity, evolved by the apparatus. The labour of five minutes, once in two hours in the day, in winding up the machine, is all that is required to produce 250 cubic feet of gas. The expense of the machine is $300, and it can be carried by a man under his arm. Such is the description of it—time will determine whether it is even so.

SOUTH STAFFORDSHIRE RAILWAY.—The deputation, appointed at a meeting held at Birmingham, on the 26th Dec., to wait upon the directors of this railway, with the view of inducing them to convene a meeting, to receive and consider certain amended terms of a lease of the railway to Mr. M'Clean and others, have so far succeeded in their object. They were received cordially by the directors, and a general meeting is fixed to be held at Walsall, on the 21st inst. It is supposed that the proprietors will not reject an offer which is considered to be very advantageous to the shareholders.

THE BARNSLEY BRANCH OF THE LANCASHIRE AND YORKSHIRE RAILWAY.—This branch of railway, so important to the inhabitants of Barnsley, being their first and only direct railway communication, was opened on New Year's-day. The Barnsley branch joins the Manchester and Leeds at Horbury, near Wakefield, passing through the stations at Darton, the Hague, and Crigglestone.

CALEDONIAN RAILWAY.—The engineer (Mr. Robinson) employed by the Committee of Investigation, states in his report to them that the works completed on the line are in a perfect and substantial condition; that an outlay of 62,120*l.* for additional sidings and station accommodation is immediately required to provide for the comfort of the passengers and the accommodation of the goods and mineral traffic. On account of the state of the finances of the company, he recommends the disposal of the rolling stock, which he states is in excellent condition, and to contract with some competent person for the due and efficient working of the line on fair and reasonable terms. He is of opinion that in the next year an increase to the extent of 20,000*l.* will take place in the mineral traffic on the line, and that a great increase will also take place in the goods traffic. Having investigated the salaries and wages paid in all the departments, with the exception of the staff in the head office, he is of opinion that the present cost (29,718*l.*) may be reduced to 23,529*l.*, making a saving of 6189*l.* On comparing the expenditure for small stores with another similar railway, he finds that the expenses of the Caledonian under that head are above 50 per cent. more than the other railway; and he considers that most of the working charges are too high, and that the permanent way might be maintained on much lower terms than it is at present. This company have given notice to the Scottish Central Railway of their intention to discontinue the working of that line, which is considered tantamount to an abandonment of the agreement existing between them.

BUCKINGHAMSHIRE.—The contractor is pushing forward the works on this line, so as to be ready by March, by which heavy penalties will be avoided.

Original Correspondence.

BAGGS'S HOT-AIR ENGINE.

SIR,—I fear your correspondent, Mr. Baggs, is much more annoyed at the conclusion my investigation has lead to, than at the mode by which and basis upon which, such conclusion rests and has been conducted. In his letter of the 22d December, he charges me with instituting ill-grounded and prejudicial comparisons; but he has advanced no proof to support such charge, unless he deems his strictures upon my incidental remarks on the possibility of his having steam at 1000 lbs. pressure to be such; if so, I will simply set myself right upon that head. But I must first call the reader's attention to the real question I had to prove, which question, as set forth by Mr. Baggs, dressed up as it was with all the speciousness of truth, and announced by him (honestly, I believe) with all the confidence which truth alone deserves, appeared to me to demand a careful and searching investigation. I, therefore, determined for my own information to investigate the matter with more care and to a greater extent than I had previously done. What was the result of my labours? to inform myself I thought might be useful to others; and although I was aware of the spirit manifested in Mr. Baggs's reply to Mr. Weston, yet I had anticipated that the more than fairness with which I knew I was conducting the investigation towards Mr. Baggs, would secure me from such insinuations as those contained in his letter to Mr. Weston; but it was not so. Never mind, we will go to the question as enunciated by Mr. Baggs himself, in his letter inserted in the *Mining Journal* of the 13th of October last. At the commencement of that letter he puts the question in the very same light as that in which I have stated it; he says, "I have proved, or at least endeavoured to prove, the great superiority of air over steam as an economical medium for the generation of mechanical power by heat;" and, again, he says, "So much for the inquiry itself, and now with regard to the conclusion to which it has brought us. I have no hesitation in saying, that if this latter be fairly and impartially examined, it will not fail to stand in the eyes of all true judges as one of the most weighty and important considerations in the whole science of practical mechanics as at present understood." And further on, in the same letter, he says, "The relative value of air and steam, as a media of expansion for producing motive power by caloric, is absolutely 4·25 to 1 in favour of air." The question, then, I had to investigate was, *the accuracy of so startling a conclusion*, and not the mode by which such conclusion was arrived at; but if I had found Mr. Baggs taking the shortest and clearest road to the true conclusion professed to be sought, I should have preferred the road he had so laboured to open up to that of making a new one for myself; but he must be a novice in travelling, who, wishing to reach London from Birmingham, is induced to go to Manchester as the safest and shortest road to reach there. With this homely illustration, I shall demand to be excused entering into calculations and comparisons, so vague and destitute of that similiarity of circumstance and directness of comparison when applied to the question in hand, as are those brought by him to support his assertion. Nay, I shall take leave to remind Mr. Baggs, that those who wish not to deceive themselves, nor mislead others, will always take the simplest and most transparent mode of investigation which the subject under consideration admits of. But, because I will not follow him in his unphilosophical, unsatisfactory, and inaccurate mode of investigating the subject, he says mine is an Irish mode of conducting an argument. I hope he is right on this head, as it is a thing much to be desired, that the Irish should take the clearest and shortest road to truth and knowledge. Need I submit to Mr. Baggs the great importance it is of, that an error of this magnitude (if it be an error) should be pointed out before pledging the thought, time, and capital, which even his invention will require to perfect it. There can be no doubt, then, that the question which it was my business in my last letter to investigate, received my first and chief attention; and all who will take the trouble to look into the matter will find (whatever Mr. Baggs may say, or insinuate, to the contrary) that I have done the hot-air system more than justice? What experiments on combustion can he bring so directly applicable to the matter in hand, and which can bear any comparison, in accuracy, with those of Dr. Apjohn (see *Report of the British Scientific Association*, vol. IV.)? With such accurate knowledge of the relative specific heat of air and water, the comparison is direct and simple; and what are the results when tried by the specific heat of the two bodies, as demonstrated by those experiments, which make the specific heat of water as 1· to ·2767, and not 1· to ·25, as set down in my last, to give Mr. Baggs the advantage of all the difference in favour of him, which different experiments indicated? It is well known that Dr. Apjohn's are the most accurate experiments upon the subject. According to these experiments, then, the advantages are not 20 per cent. only, as indicated in my last, but 31 per cent. in favour of steam.

This fundamental principle upon which any advantage air possesses must be based, I have investigated with the single view of supplying my own mind with the truth upon the matter, and shall notice what more Mr. Baggs has to say upon the subject only inasfar as it is conducive to that end. A true friend to Mr. Baggs would recommend him to examine, more closely than he seems to have done, into the deduction to be made for loss of temperature by the expansion of the air in the working cylinder, and also to the increase of pressure in the air-pump by increase of temperature arising from compression; but as he seems to be satisfied upon these points, I am sure I am. Now, to what Mr. Baggs calls the strange and tortuous conclusion in my saying, "*therefore*, one thing seems certain, which is, that if the *water* in the vessel the air passes through on its way to the working cylinder, should attain the same TEMPERATURE—viz.: 550°—Mr. Baggs would surpass us all in high-pressure steam, as in such case it would be above 1000 lbs. pressure per square inch." I have brought this passage of my former letter under notice again, because it is quoted by Mr. Baggs; and the word, "therefore," altered into italics by him; but the word temperature, which because it was left out in Mr. Baggs's quotation, I have distinguished by capitals. I have also distinguished the word water by italics, to point the reader's attention to the three words in this proposition, which render my meaning unmistakeable. I shall pass over all Mr. Baggs's suppositionary views of how such a possibility (and be it remembered, I only mentioned it incidentally, and as a possibility) as 1000 lbs. pressure could be produced, for on this point, if the terms of the proposition were realised, the 1000 lbs. pressure would be a certain result, and, therefore, the only difficulty about the matter is, how could the water attain the temperature of 550°? Mr. Baggs implies, in his answer to me, that it is impossible to produce steam of 1000 lbs. prossure, in combination with air of 30 lbs. to the inch; this, I should think, no one will dispute with him. But I recal his attention to the fact, that it is not with the pressure of the air I am here dealing, but its temperature; and as I suppose the hot-air engine is not to be one of the perpetual motion class, I can fancy the air to be shut off from the engine, or imprisoned, as I think Mr. Baggs somewhere terms it; whilst from the diagram of his engine, it appears there is no stop-off valve between the furnace in which the hot air is heated and the vessel containing water, but that the hot air rests on the top of the water.

In such case, is it not possible that as this water is so brought into communication with other bodies—the temperature of which being 550°—I say, is it not possible that steam may be generated to such an extent as to squeeze the air, which was previously of 30 lbs. pressure, until it may have 1000 lbs. pressure? But Mr. Baggs will tell me, no doubt, that he will guard against that by a safety-valve. We have safety-valves in steam-boilers; but still it happens pretty often that some how the steam gets to an enormous pressure, as is manifested by its effects. That such results are, in the generality of cases, produced by the heat being on the surface, or just above the water, is pretty evident; and as in Mr. Baggs's case, his screw and the metal of the boiler, as well as the air, will all afford means for conducting the heat to the water—whilst a very small quantity of heat, brought in contact with water in such manner, is far more dangerous than a large amount applied at the bottom of it, is, I think, what few will doubt who have taken any trouble to investigate such matters. What I have said above will, I trust, show your readers why I adverted to this possibility, which seems so to puzzle Mr. Baggs. In conclusion, I must, good naturedly, remind Mr. Baggs, that the laboured insinuations scattered through his reply to Mr. Weston, and to which he has referred me, having as they have for their object to cast discredit upon statements, simply because those who make them happen to be inventors, is an unbecoming mode of endeavouring to maintain one's position. If I am really desirous to discover and uphold the truth, what matters it to me whether he who takes a different view to mine be an inventor or not? If I can show his principles unsound, or his inferences false, there is an end of the matter; and if, after that, he chooses to indulge in personalities—a puerile or unprofitable mode of reasoning—I can very well afford to leave his arguments to the judgment of the indifferent spectator—that is, the general reader; but, if I cannot show that truth is on my side, it is clear that the weakness is somewhere else, and not because my opponent is an inventor. So, in this case, Mr. Baggs, you may rest assured, that if you have the truth with you, you have nothing to fear from an open controversy such as this, with the name and address of your opponents affixed to what they write. There is nothing mean—nothing dishonest—in such open conflict of opinion and critical investigation of inventors pretensions to their having, as they think, made valuable discoveries or improvements.

If inventors encountered no opposition but what was conducted in the same open and candid manner, I am one who think that such opposition would advance the cause of truth, assist in developing those resources which contribute so largely to the advancement and happiness of mankind, and, at the same time, often relieve the inventor himself from a delusion in which the adoption of false principles, hasty generalisation, or incorrect inference had involved him. Mr. Baggs charges me with garbling and misquoting portions of his letter; I shall notice such charge no other way than to say, that all I attempted to quote was six words, which were marked as such, and which he knows were correct. In no other respect did I pay the slightest regard to his phraseology. As to his saying my letter is almost identical in substance with that of Mr. Weston, a reference to the two letters will settle that point. Having thus endeavoured to put matters on a fair footing, as regards Mr. Baggs and his hot air-engine, I will, by your permission, in an early number, see if I can vindicate my own pretensions in connection with steam.

Birmingham, Dec. 26. T. CRADDOCK.

BAGGS'S HOT-AIR ENGINE.

SIR,—I regretted at the time you felt it your duty to close the correspondence on the above subject, and was, therefore, glad when you had permitted it to be resumed, because I feel certain that the *full* and *free* discussion on *all* subjects is the best and most legitimate means of advancing *truth*. Presuming this to be a correct view of the case, it follows, of necessity, that the ultimate results of such discussion cannot be otherwise than beneficial to all parties, but more especially so to those immediately interested in the investigation; and, I doubt not, that your correspondent (Mr. Baggs) will, after mature reflection, admit that I, at least, *might* have been actuated by other motives than those he credits me for, when I made the "striking contrast" he alludes to in his reply to Mr. Craddock, and which Mr. Baggs did me the honour to republish; on reference to which, it will be seen that my object was certainly not, as he states, "to place, in striking contrast, the great merits of my own invention [which were barely alluded to] with the manifest deficiencies of his." The computations were, as therein stated, made from quantities of his own supplying, in which computation I credited him with the *full* elastic force of his compresed air, expanded until it was in equilibrium with the atmosphere, which, although I adopted his minimum, placed him in a better position than he would have enjoyed had I claimed on behalf of steam *its* full elastic force, expanded until its pressure was in equilibrium with a vacuum. Nor did I take the *initial* pressure nearly so high as it is common to use steam in the locomotive engine, which he allowed "evaporated a cubic foot of water by the combustion of 8 lbs. of fuel." Mr. Baggs is, perhaps, aware that good stationary boilers do not consume so much. If, however, he would like to know wherein his theory is most in error, and is not particular whether his enlightenment comes through a civil engineer or a knight of the jack-plane, I may state that the great and palpable error of his theory, as it appears to me, consists in the supposition, that because he obtains, or supposed he would do, a larger increase in the *original volume* of elastic media, of equal or superior pressure, by applying heat to air rather than to water, it is, therefore, more economical as a mechanical agent. "It is here the fallacy reigns." A cubic foot of air, at 30 lbs., acting against the atmosphere, has an effective initial force of 15 lbs., and, when expanded to 2 ft., is in equilibrium with the atmosphere, and during the act of expansion will only exert a mean effective force of rather under 6 lbs. per inch, two-fifths only of the initial pressure; so that the mechanical value of a volume of air, at the pressure stated, is at the most but 1·4. Let us now ascertain the mechanical value of a volume of steam, at the same initial pressure, acting against a vacuum; the value of the initial force alone is 2·0, and, in the act of expansion, it will yield at least 70 per cent. of that quantity for each time it doubles its volume, which may be done at least four times, and the steam would then have an *effective* force of nearly 2 lbs. We have, then, 2·0+1·4×4=7—6, or nearly five and a half times the value of the cubic foot of air; then we have to deduct 50 per cent. for pumping in the air, and about 1-65,66ths of the power of the steam for pumping in the water; so that the difference in mechanical value is 11 to 1 in favour of steam; and that unless it can be shewn that the expansion by the absorption of caloric is 11 to 1 in favour of air, it will be useless longer to insist on its superior economy for motive-power.

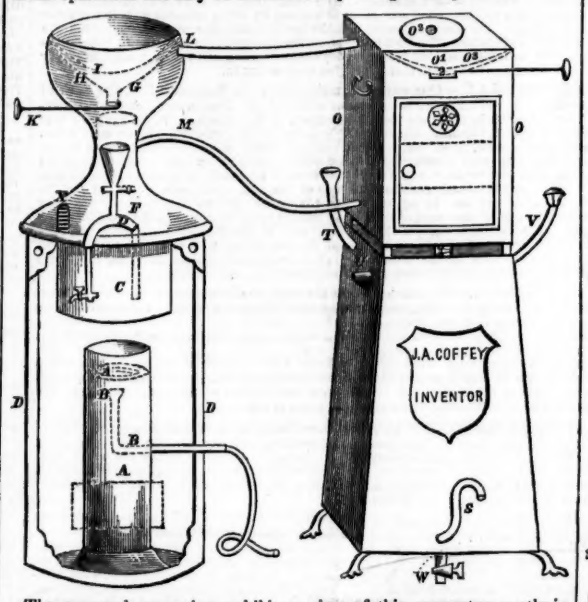
It is not alone the amount of original, or even final, expansion of any fluids which may be caused by the presence of a given measure of caloric, that determines their mechanical value, it is materially affected by density; but more especially by the absence of atmospheric or other opposing force, which absence admits of an almost unlimited extent of expansion, though it must be borne in mind that the gain by expansion is not in proportion to the degree of expansion, but in exact proportion to the times the fluid doubles its volume—that is, when used against a vacuum. Thus, in the act of expanding from 1 ft. to 2 ft., the entire force exerted will be precisely the same as in expanding again from 2 to 4 ft., or from 4 to 8 ft., &c. Such being the case, it appears to me that the volume cannot be advantageously increased beyond 16 times its original bulk; for to augment the gain by expansion from 4 to 5, will require to increase the volume from 16 to 32 times; and to add another one to the gain by expansion, its volume must be augmented from 32 to the enormous extent of 64 times its original bulk. It, therefore, appears to me that as equal measures by weight of steam, though generated at unequal pressures, absorb an equal quantity of caloric, and, if used expansively against a vacuum to an equal extent, yield an equal amount of mechanical power; and as we have seen that whatever the initial pressure may be, the extent or degree of expansion is limited in practice, to, say 16 times its primitive volume, it is equally as economical to generate steam at four, and possibly at two, atmospheres as at ten times that pressure. There is, likewise, this advantage in favour of a moderate pressure—viz., that the heat passing up the chimney is lost. The primary question which yet remains to be solved is one of HEAT, how and by what mechanical arrangements shall its necessary development be regulated, and it be employed with the least waste and greatest economy. In my next, I will endeavour to solve that question.—J. WESTON: *Jan.* 2.

[For continuation of "Original Correspondence," see page 9.]

IMPROVED CHEMICAL APPARATUS.

[Protected under Act 6 and 7 Vic., cap. 65. Inventor and proprietor, J. A. Coffey, Sydney-street, Commercial-road East, coppersmith, &c.]

Mr. Coffey's improved chemical apparatus supplies in a most compact form a still and condenser, evaporating apparatus, heating apparatus, and the means of generating gas in retorts—indeed, its varied utility in chemical operations can only be understood by seeing it in operation.



The annexed engraving exhibits a view of this apparatus partly in section, in which B denotes a burner, supplied with gas by a flexible pipe; the same being lighted for operation, causes the space or chamber, O, to become heated, communicating heat to the boiler or still, C (which is to be previously filled with liquor by the funnel, E), producing ebullition of the liquid therein, the vapour therefrom ascending through the neck of the still-head, F, into the cup-shaped vessel, G, heating the underside of the vessel, H, which communicates heat to the evaporating pan, I, and operating upon whatever may be placed therein. The vapour that may be condensed by contact with the vessel, H, will fall down the sides of the vessel, G, passing through the pipe M, to a distillating condenser of novel form, contained in the chamber beneath, the hot vapour ascending and passing through the pipe, L, to the hot chamber, and circulating around the oven contained therein, operating on what be therein; or in the evaporating pan, O^1, provided with a lid, O^2, and contained in O^3, passing through the pipe, K, to the condenser, wherefrom it flows off by the pipe, S. In conducting the process of distilling, it will be necessary to fill the chamber containing the condenser with cold liquid by the funnel-pipe, T, the pipe, V, allowing any waste to flow off. By means of the pipe, V, communicating with the interior of the distillating condenser, the superfluous gases will pass off, preventing accidents, the pipe and cock, W, allowing any lodgment therein to be cleaned out when necessary. By opening the valves, 1, 2, the funnels or vessels, H, and O^3, may be used to heat a retort, or otherwise, first removing the moveable pan.

RAILWAY PROPERTY IN IRELAND.—At the Carlow quarter sessions, held on Thursday, counsel on behalf of the Irish South-Eastern Railway, from Carlow to Bagnelstown (10 miles), stated that the gross receipts for six months were but 1474*l.*, while the expenditure for locomotive power was 1379*l.* There were various other heavy expenses which showed that there were not only no profits, but the concern was worked at a serious loss. He would, however, make an offer of a nominal rate of 1*l.* per mile, which was necessarily accepted. The Great Southern and Western Company appealed against the rate which the Carlow guardians had struck. It was stated that previous to the decision of Mr. Hutton, the amount of the rate to which the company was liable was 500*l.* per mile. This was reduced by Mr. Hutton to 100*l.* per mile, and the object of the company was to effect a still greater reduction. After entering into several calculations, and making allowances for interest on plant, the company's stock, and tenants' profits, the net amount of profit to a solvent tenant was ascertained, and a balance struck which gave 84*l.* per mile. The barrister, directed that the mileage rate should be reduced to this sum, which amounts to 136*l.* for four miles.

PICKFORD'S MANCHESTER AND LONDON VAN.—It may be well to record the rates charged and the money earned by Messrs. Pickford and Co.'s van, which ran daily between London and Manchester; and those who now complain of railway monopoly and high rates would do well to consider that railways have reduced the rates between London and Manchester from 23s. 4d. to to 8s. 6d. per cwt. for silk goods; 2s. 1½d. for Manchester goods, and 1s. 6d. for cotton, wool, or grain and flour. The yearly earnings were as follows:—

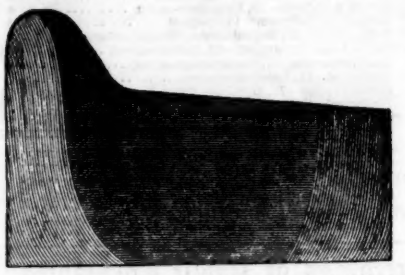
1818	£23,039	6	2	1822	£22,615	16	6
1819	23,532	5	9	1823	23,423	4	6
1820	25,260	2	7	1824	23,653	15	6
1821	24,381	14	4	1825	23,835	13	9

In July, 1822, rates were lowered from 23s. 4d. to 20s. per cwt., for goods from Manchester to London, and from London to Manchester from 20s. to 18s. 8d.; and on the 19th February, 1825, an opposition van commenced running between Manchester and London, called the "Association Van," which, on the 9th April, reduced the rates to 16s. per cwt.; on the 12th January following, Messrs. P. and Co. bought the stock, &c., of this opposition. The van was extended to Liverpool on the 6th December, 1819.—*Salt's Statistics.*

RECENTLY PROJECTED ASSURANCE SOCIETIES.—The titles of projected companies provisionally registered during the year 1849, are 63 in number; nine appear, however, to be duplicates or partially altered, applying, it would seem, to others previously named, and emanating from the same promoters. The following is a statistical summary of their various intended operations:—Accidental death, 5; colonisation, 1; life alone, 35; life and fidelity guarantee, 8; marine, 3; cattle, 2; fire and life, 6; fire alone, 2; property, 3; solvency and commercial debt, 2. Some of the titles are highly novel, and characteristic of the curious taste of their progenitors. One starts with a "Champion" and ends with "a British Homœopathic Life," suggestive, we suppose, of infinitesimal assurances. Then follows a "Gas Protector's Mutual," with the additional variety of argand and bat's-wing policies. Cambria, hitherto neglected, enjoys a triple slice; nor are the mining, trading, and industrial interests neglected. Amongst the novelties in the shape of assurances we have a sample of "Bachelor Policies of Fidelity," but whether the guarantee applies to pecuniary or hymeneal engagements the chronicler speaketh not. If, however, to the latter, we doubt not but the insurers will be well supported by the fair sex.—*The Reporter.*

THORNEYCROFT'S PATENT RAILWAY AXLES, RAILS, AND TYRES.

RAILWAY TYRE.—SECTION NO. 1, HALF SIZE.

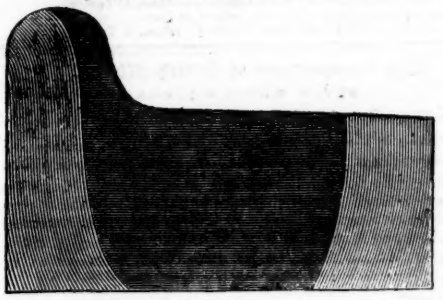


The middle, or wearing, part of this tyre is composed of chrystaline charcoal iron, the hardest and soundest iron made. The outward edges are made from a mixture of India charcoal pig with the toughest fibrous iron—the whole made upon an improved principle into one homogenous mass.

These charcoal tyres are warranted better and more durable than any tyres made in England.

Price—£15 per ton net at the works, up to 3½ cwts. each.

RAILWAY TYRE.—SECTION NO. 2, HALF SIZE.



The middle, or wearing, part of this tyre is composed of the best refined chrystaline puddled iron.

The outward edges are of the best No. 3 fibrous iron, and put together upon an improved principle into one homogenous mass.

These tyres are warranted quite equal to any made in Staffordshire.

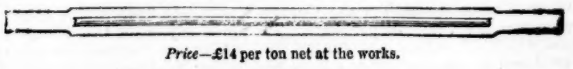
Price—£10 10s. per ton net at the works, up to 3½ cwts. each.

BEST STAFFORDSHIRE TYRES—£9 10s. per ton at the works, up to 3 cwts. each.

Fig. 1.

SECTION OF BRIGG'S PATENT COMPOUND AXLE.

Scale ½ inch to a foot: parallel axle.



Price—£14 per ton net at the works.

Fig. 2.

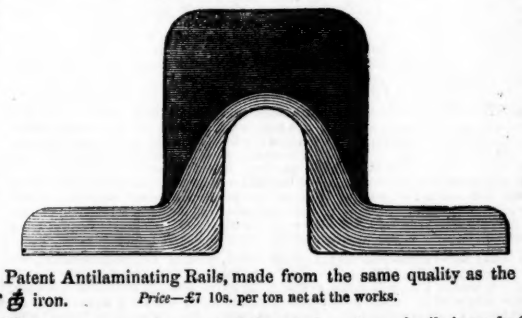
SECTION OF BRIGG'S PATENT COMPOUND AXLE,

Showing the extent to which the internal bar is welded solid at each end, drawn down in the middle half an inch.

Price—£15 per ton net at the works.

PATENT ANTILAMINATING CHARCOAL RAIL.—SECTION NO. 1, HALF SIZE.

Price—£10 per ton net at the works.

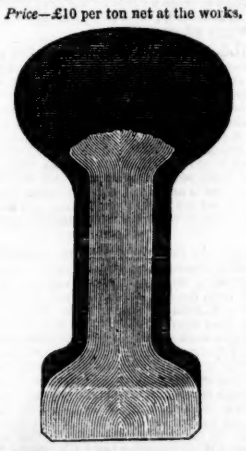


Patent Antilaminating Rails, made from the same quality as the best S B iron. *Price*—£7 10s. per ton net at the works.

The upper, or wearing, part of these two sections of rails is made from antilaminating charcoal iron, much harder than any other iron, perfectly free from lamina. The under, or fibrous, part from best No. 3 puddled iron.

PATENT ANTILAMINATING CHARCOAL RAIL.—SECTION NO. 2, HALF SIZE.

Price—£10 per ton net at the works.



Patent Antilaminating Rails, made from the same quality as the best S B iron. *Price*—£7 10s. per ton net at the works.

Rails of the same sections are made from puddled iron, quite free from lamina in the wearing part, but soft and less durable than charcoal rails.

This principle is applicable to any kind of rails.

I beg to inform the railway public, that the machinery for testing the strength of axles, and the strength and soundness of the tyres, is now ready; and I offer it to the public without any charge for its use, to try any one's make of axles and tyres they may think proper. A machine has been designed, and is now making by Messrs. Fox, Henderson, and Co., for proving the quality and durability of tyres and rails by actual wear and tear, the same as when at work on a railway, at any speed you like. The name of the designer is, I trust, a sufficient guarantee for its efficiency; in fact, it will be so true a test, that it must prove satisfactory to the most fastidious mind; and, so soon as it is completed, it shall be offered to the public, on the same terms as the testing machine above-mentioned.

Shrubbery Iron-Works, Wolverhampton. G. B. THORNEYCROFT.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY	Asiatic—3, New Burlington-street	2	P.M.
MONDAY	Entomological—17, Old Broad-street	8	P.M.
	British Architects—16, Grosvenor-street	8	P.M.
	Medical—3, Bolt-court, Fleet-street	8	P.M.
	Pathological—21, Regent-street, Waterloo-place	8	P.M.
TUESDAY	Medical and Chirurgical—53, Berners-street	8½	P.M.
	Civil Engineers—25, Great George-street	8	P.M.
	Zoological—11, Hanover-sqa.	3	P.M.
	Syro-Egyptian—71, Mortimer-street, Cavendish-square	7½	P.M.
WEDNESDAY	Geological—Somerset House	8½	P.M.
	Graphic—Thatched House Tavern	8	P.M.
	Pharmaceutical—17, Bloomsbury-square	9	P.M.
	Ethnological—17, Saville-row	8	P.M.
	Literary Fund—73, Great Russell-street	3	P.M.
THURSDAY	Royal—Somerset-house	8	P.M.
	Antiquaries—Somerset-house	8	P.M.
	Royal Society of Literature—4, St. Martin's-place	7	P.M.
FRIDAY	Astronomical—Somerset-house	8	P.M.
	Westminster Medical—17, Saville-row	8	P.M.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

MONDAY ..... Wheal May Mining Company—offices, at Twelve.
North Kent Railway—London Tavern, at Twelve.
Defender Fire and Life Insurance Company—New London Hotel, Blackfriars, at One.

TUESDAY ..... Cobre Mining Association—offices, at One.
Anglo-Mexican Mint Company—offices, at One.
Colonial Banking Company—London Tavern, at Twelve.

WEDNESDAY .. Grand Junction Water-Works Company—offices, at Twelve.
Alliance Marine Assurance Company—offices, at Twelve.

THURSDAY .... Sambre and Meuse Railway—offices, at One.

FRIDAY ..... East and West India Dock Company—offices, at Two.

The Compendium of British Mining.

BY J. Y. WATSON, ESQ., F.G.S.

SOUTH WHEAL FRANCES COPPER MINE.—In 124 shares, price 300*l.*, paying dividends of 10*l.* per share every two months, or 60*l.* per share per annum, being at the rate of 20 per cent. The dividends paid in 1849 were 7192*l.*, or 58*l.* per share. Another becomes due this month. South Frances, situated in a rich district, having the lodes of South Basset and other mines, was worked many years ago; but the present company commenced operations in 1834, and have paid dividends as follows:—

In 1845	£ 744
1847	9796
1848	5704
1849	7192
Total	£23,436, or £189 per share,

When sinking 20 fms. deep, in the early stage of the present company's operations, several large pieces of oak timber were found in a fine state of preservation, after having lain there upwards of a century. The ores from the mine are rich, greatly exceeding in value the average of the county.

GREAT POLGOOTH TIN MINE.—In 256 shares, 150*l.* per share paid up, price 300*l.* Dividends paid this year 21*l.* per share, or 7 per cent. The operations of the present company have recently commenced; the mine is rich in ore; and should the price of tin keep up, much larger profits are calculated upon.

WEST WHEAL JEWEL TIN AND COPPER MINES.—In 3845 shares, 11*l.* per share paid up, price 3*l.* per share. The mines adjoin the Old Wheal Jewel, which had realised in profits 300,000*l.* After many ups and downs, West Jewel bids fair to become a good speculation; the returns of tin and copper about meet the expenses, with a working capital of about 1000*l.* in hand; whilst from its situation and proximity to the Old Jewel, something good may one day turn up.

[To be continued in next week's Mining Journal.]

Mining Correspondence.

BRITISH MINES.

ALFRED CONSOLS.—Our work is now going on very favourably, and I am glad to say that the lode in Field's engine-shaft, sinking in the 60 fm. level, is from 6 to 7 ft. wide, yielding from 6 to 8 tons of copper per fm., worth 45*l.* per fm.; and in the end of the 60 fm. level, east of this shaft, the lode is about 5 ft. wide, 2½ ft. of the south part nearly all ore, and on the north there is a good branch of copper ore from 6 to 8 inches wide; the other part of the lode is producing good stones of ore—the whole lode is worth 35*l.* per fm.; the copper from this level produces 11 per cent. The lode in the 60 fm. level west is about 3 ft. wide, and yielding from 1 to 2 tons per fm., worth 6*l.*

BARRISTOWN.—In the end driving west on the new lode (and which has been called a 26 fm. level, as it will become a main working level, but when commenced was only intended for a temporary one, to prove the lode), the lode is regular, and producing about 14 cwts. of lead per fm. The cross-cut, from the bottom of Slob shaft, is in full course of driving, and worth about 3*l.* per fm. We have erected a whim, &c., on Slob shaft, and must now prepare to extend the slide ends there, to draw the water to the 18 fm. level, and should the new lode continue its present course and underlay, it will be cut by sinking this shaft. The lode in the back of the 26 fm. level is producing about 7 cwts. of lead per fm. The lode in the stopes in the bottom of the adit level is producing rather more ore than for some time past, but is very irregular and uncertain.

BEDFORD UNITED.—In the 103 fm. level, east of the engine-shaft, we are still driving by the side of the lode. We intend taking down the lode in the 103 fm. level, east and west of Burley's winze, as also in the 90 fm. level, by the end of this week. The lode in Bray's winze, in the 90 fm. level, remains much the same as last reported, producing about 7 tons of ore per fm. There has been no lode taken down in the 70 fm. level east. We weighed at Morwellham, on Friday last, October ores, 118 tons 6 cwts., and sampled November ore, computed 117 tons (21 cwts.)

BIRCH TOR AND VITIFER.—We have begun to clear our leats, and I hope we shall get the landlakes water home this evening, which will enable us to begin to work. We are also clearing the leats from the head-wears, but that will take us many days. I hope we shall be able to provide for this by the next winter. The tin sold has, owing to the weather, been 4½ tons only, and the price 46*l.* 10s. per ton. More next month, unless the weather is very severe.

CAMBORNE CONSOLS.—I was unwilling, from the presence of a considerable quantity of arsenic and other foreign matter, which is easily sublimed, to offer our silver ore for sale in the crude state, and it has cost me some little trouble to find a roasting-house for the purpose, and even now I have been unexpectedly disappointed till Monday morning, the house having been occupied by others. As to our prospects they are, undoubtedly, very cheering, though I must admit tardy in their results. The rise in the back of the silver lode in the 20 is looking very promising, but the end is in a harder bar of ground than hitherto, producing some beautiful stones of ore. Our 40 fm. level, on the silver lode, is pretty much improved within the last two days, and there is good reason for hoping that we shall soon meet with silver, which would insure us a back of 20 fms. of silver ore. Our caunter is not productive at present, but it is giving out large quantities of water, and I think we are close upon Tyndale's lode, and so we must be in our cross-cut from Tyndale's shaft, to both of which I am looking with very great interest and expectation.

CARTHEW CONSOLS.—At the upper mine nothing of importance has been done in the 65 fm. level north this week; but in prosecuting this level south, I am very much pleased at being able to say I find the lode to be about 2 ft. wide, of good saving work throughout; this good lode, it will be remembered, is standing in whole ground from the shaft to the present end, with 15 fms. of backs, and was not seen by the late party who worked this mine, they having driven by its side the whole way. The 48 fm. level end is much improved this week—good work in lead was broken therefrom to-day. In the end in the 28 fm. level I find no particular change; we have saved some good work from it since my last. Several of the tribute pitches look very well; whilst others look rather poor. When forwarding my last setting report, an omission to state of the pitches being let for two, instead of one month, occurred; this alteration is a precaution against the waste of time by tributers. Messrs. Sims, Willyams, Neville, and Co., have become the purchasers of the lead and copper ores, the former at 10*l.* 12s. 6d. per ton, and the latter at 5*l.* 19s. per ton. At the lower mine, the lode in the adit end looks very promising indeed, rather improved since Saturday last; the ground is very good.

COURT GRANGE.—The weather is against our dressing at Court Grange. At Peny-cefn the pumping-wheel still works; but I believe it is the only wheel in Cardiganshire that is in motion. Goginan, Bwich, and the other mines in this district, are frozen up for many days; Llettyn-hen is also frozen up. We got on exceedingly well with the dressing, as long as we could work, having crushed about 10 tons of ore, which, with a day or two open weather, can be made ready, and I yet hope to get the promised quantity (from 20 to 30 tons), notwithstanding the adverse times. The new feature in the development of the underground work at Peny-cefn Mine is the steady opening of good ore ground westward. The 30 fathom level has now, in its progress westward, gone into 40 fathoms of exceeding good silver-lead ore ground, which still continues to yield about 45*l.* worth of lead and silver to the fathom, in the end of the level, and to what distance it may extend we can, fortunately for the mine, form no opinion. At Lettyn-hen everything indicates a very good body of ore ground below; in travelling along in our 10 fm. level from the surface we find certain portions of it coming up very rich, and between them pieces of gossany lode, less productive, but all showing symptoms of a large course of lead below. We cannot speak with any degree of certainty as to the extent of this deposit of ore which can only be ascertained by depth of working, and probably the best portion of the ore will not be reached for many fathoms yet.

CWM ERFIN.—The stope over the 20 fm. level, from 15 to 20 fms. east of the engine-shaft, is worth 5*l.* per fm. for ore; the same stope, from 20 to 30 fm. east of engine-shaft, is worth 7*l.* per fm; the same stope, from 30 to 40 fms. east, is worth 12*l.* per fm. The 20 fm. level, east of Robert's winze, is worth 16*l.* per fm.; the 20 fm. level, west of Robert's winze, is worth 5*l.* per fm. The stopes over the 20 fm. level, east of Robert's winze, are worth 14*l.* per fathom. The winze under the 20 fm. level, and the 20 east of whim shaft, is now under water, on account of the frost stopping the engine-wheel since Thursday last. There was very little done for this week towards the dressing, and the frost is still continuing.

DAREN.—The ore ground has improved in the stopes in the middle adit at Daren, and we have discovered the same run of ore in level Coed along the old workings under this ground. We have also seen, in a level that we have driven a short distance westward from a winze between these levels, a very good piece of ore ground, and we, consequently, may now rest satisfied that we have a large quantity of ore ground to take away in this part of the mine. West of Daren western engine-shaft, we have not yet discovered anything in the cross-cut driving southward, and are yet hardly clear of the Daren lode there—the south lode being several fathoms to the south still.

DEVON AND COURTENAY.—In the end, driving west in the 40 fm. level, we have a leading branch on the south wall of the lode, about 3 in. wide, composed of good yellow ore and white iron; the ground in the end very favourable. In the 50 fm. level, driving east, the lode is 2 ft. wide, composed of spar and spots of ore. In sinking our engine-shaft under the 50 fm. level, we have intersected a branch, containing mundic, spar, and peach; but the main lode has not yet been intersected. The pitches continue to look well.

EAST WHEAL GEORGE—*Dec.* 25.—Since my last report we have driven the adit end east 5 fms.; the lode is from 3 to 3½ ft. wide, and about 1 ft. high, in the bottom of the level, producing good stones of ore; the ground is favourable for driving, at 14s. per fm.——*Jan.* 1.—Since my last we have driven about 5 fms. on the lode, which is producing good stones of ore, and the end is looking well. The adit end is driven 15 fms.——The following report has been received from Capt. Carpenter:—*Jan.* 3.—Having extended the adit level east on the course of the lode, we shall commence to sink on it under the level, to ascertain its properties going down, as well as the underlay, so as to enable us to form a more correct opinion where to place the engine-shaft, that being a very desirable object to proceed with, as the lode gives great encouragement for a more extended scale of operations. I think there cannot be better prospects for ultimate success than already seen so near the surface—the lode producing good work for copper ore the whole distance it has been operated on, and fully to warrant an outlay in the necessary appliances to prosecute the undertaking with vigour.—Mr. English, having been deputed to visit the mine, reports that the lobby had been opened 38 fms., and the lode driven on 15 fms., with an improvement of the lode—good stones of ore being in the end, but not more than 2 ft. in the "fast;" about 5 tons of ore has been put to "pile;" the adit end has been discontinued, and a winze is now going down upon the lode, to determine its underlay, antecedent to sinking the engine-shaft. A 40-ft. wheel has been purchased with the several appendages; and, from the indications which are presented, there is little doubt but that the mine will appear in the ticketings on an early day.

EAST TAMAR CONSOLS.—I have the satisfaction to inform you that all our men are again working in their places at Furzehill, with the exception of those employed in the 80 end south, and I expect these will be able to get into their end to-morrow morning. The misfortune we have had will throw us out of our usual course for a time; but I hope to recover our position without exhibiting any falling off in the returns. We must borrow a few tons of ore from that which is broken during the month in which we next sample, and pay it back gradually. The much improved state of the mine, previous to the accident, will permit of our doing so without its being attended with any positive inconvenience. The men seem eager to make up their lost time, and this disposition will be a material aid to us. The frost has stopped the masons at Gullett's shaft; the engine-house is so far advanced, that five or six days open weather will suffice to complete it, or at least to get the roof on, so that the engine may be put in.

ESGAIR LLEE.—Our pay and setting was on Saturday last, the 29th of December, and the following is an account of the latter. The deep adit, east of the cross-cut, on the north lode, by six men, 3 fms. stent, or the month, at 7*l.* 6s. per fm.; lode large, but poor at present. The winze, to sink below the 12 fm. level, by six men, 3 fms. stent, or the month, at 8*l.* 10s. per fm.; lode 5 ft. wide, producing some stones of ore. The 12 fm. level, east from surface, on the caunter lode, by six men, 8 fms. stent, or the month, at 3*l.* 10s. per fm.; lode 2 ft. wide, composed principally of gossan, quartz, blende, and lead. The deep adit east from the base of the hill, by six men, 6 fms., or cut the lode, at 1*l.* 10s. per fm. In my last report I informed you we were driving north from the shallow adit 10 fms west of Morgan's winze, in order to ascertain the breadth of the caunter lode—we have not yet cut the north wall of the lode; the lode is looking very promising, composed of first quality gossan, blende, and lead. The engine-shaft, to sink below the deep adit, by nine men, 3 fms., or the month, at 11*l.* per fm.; but, the wheel and water courses are all frozen up, and have been for some days past.

HAWKMOOR.—We have just cut through the lode east of the cross-course, and find it to be 3½ feet wide, yielding full 5 tons of good ore per fm. I consider this the most important discovery made, as I have no doubt it will be found to hold, equally good, home to the great cross-course, about 20 fms. east. We have suspended the 20 fm. level west, and put the men to rise against a winze for the purpose of ventilation. The lode in the engine-shaft, when last taken down, a fortnight since, was 3½ ft. wide, with a leader of ore 20 inches wide, yielding 5 tons of ore per fm. to the length of the shaft. In the pitch in the back of the 10 fm. level east the men are getting good wages. We sampled, on the 26th ult., 28 tons 20 cwts. 2 qrs. of good quality ore.

HEIGNSTON DOWN CONSOLS.—The lode in the 20 fm. level, west of Hitchins's shaft, produces some good saving work for copper ore. The lode in the 35 fm. level, east of the cross-cut, is much the same as last reported on, as also the winze sinking below this level. In the 45 fm. level, east of the cross-cut, the branch we are driving on is about 8 in. wide; judging, however, from its bearing, I am inclined to believe the main part of the lode is still farther north.

HOLMBUSH.—The dam will be removed from the 120 fm. level south, on the lead lodes, within a few days, after which an efficient pair of men will be employed to explore it with all possible speed; the pitch in the back of this level is still very productive. The ground in the 120 fm. level cross-cut south towards the Flap-jack lode, is not so favourable for driving as we have seen it; the lode in the 110 south is 3½ ft. wide, composed of quartz, prian, soft killas, and stones of lead. The Flap-Jack lode in the 100 fm. level, east of the great cross-course, is 2 feet wide, producing about 3 tons of copper ore per fathom; but we fear the quality is low, in consequence of the great quantity of mundic there is in it. We weighed, at Calstock Quay, on Friday last, our parcels of copper ore—viz.: 58 tons, computed 57 tons 4 cwts. 2 qrs., and 42 tons, computed 41 tons 12 cwts.

KINGSETT AND BEDFORD.—Since we holed the winze to the deep adit we have again resumed driving south, and am happy to state that the lode appears to be much improved; although there has been no lode taken down during this week, yet the great change in the ground indicates an improvement in the lode. The ground in the new rise is getting much softer, and the branches around the lode appear to be changed in their underlie; the lode and branches here very much resemble those in the old rise, a fathom or two before we cut the bunch of lead. In driving a cross-cut east of the deep adit, about 40 fms. north of Carpenter's shaft, we have just touched a lode underlaying east about 9 in. in a fm., from which I have broken some excellent stones of lead, but can say nothing of its size as yet; it appears to be a very regular and well-defined lode.

KIRKCUDBRIGHTSHIRE.—At Stewart's shaft, the men have been putting down the puppy lift, and some new connection rods, this week, so that there has been no ground sunk since last reported. In the 62 end west the lode is 2 ft. wide, yielding 4 cwts. of lead to the fm.; the lode in the winze over this end is 4 ft. wide, yielding 5 cwts. of lead per fm. The lode in the 50 end west is above 4 ft. wide, with a good rib of lead coming in on the north side, worth half a ton to the fm. The vessel has arrived to-day for a cargo of lead, but the frost has set in very severe, so that we have scarcely a cargo in stock yet.

LEWIS.—In driving south, in the 60 fm. level, the ground is favourable, and expect to cut the south branch at or about the end of next month. The lode in the 70, east of tin shaft, is 2 ft. wide, worth 6*l.* per fm.; in driving the 70, south from copper ore shaft, we have intersected the south branch, producing some good work for tin; the 70, east on south branch, is yielding some good work, driving at 12s. tribute; the stopes in the back of this level are worth 25*l.* per fm. The lode in the 60, east on south branch, is much the same as when last reported; the stopes in the back of this level are worth 20*l.* per fm. The lode in the 60, east on Cock's branch, is small and unproductive; the ground in the 60, south from sump whim-shaft, is hard. The lode in the 50, east on south branch, is 1 ft. wide, worth 4*l.* per fm.; the stopes in the back of this level are worth 9*l.* per fm.; the lode in the 50, east from copper ore shaft, on Cock's branch, is 10 in. wide, with some good stones of tin; the stopes in the back of this level are worth 8*l.* per fm.; the south lode in the 50, east from Oak shaft, is 10 in. wide, with some good stones of tin. The 40, east from copper ore shaft, on Cock's branch, is yielding some good work, driving at 12s. tribute; the 40, west on Cock's branch, is opening moderate tribute ground; the stopes in the back of this level are worth 7*l.* per fm. We expect to cut Cock's branch in driving the 30, south from copper ore shaft, at or about the end of next month.

SOUTH TAMAR CONSOLS.—The shaft is sunk 3 fms. 5 ft. 6 in. below the bottom of the 100 fm. level; the ground is tolerably fair for sinking, and the lode in the bottom is large, with small branches of ore, and likely to improve; in the north end, in the 100 fathom level, the lode is much easier for driving, and worth 5 cwts. of ore per fm. The alteration and improvement is considerable and important, as we are approaching Glynn's shaft, where, according to report, the lode was very productive during the last workings; in the south end, in the same level, the lode is also much improved; it is 3 ft. wide, easy for driving, and worth 6 cwts. of lead per fm. In the 90 end south the lode is large, composed of can, and worth 8 cwts. of lead per fm. In the 80 end south the lode is small, rather disordered, and poor at present. In the 70 end south the lode is 18 in. wide—1 ft. of which is yielding good work. The 60 fm. level has been cleared for many fathoms from the shaft; but, finding that the last 40 fms. were not driven on the course of the lode, we have discontinued clearing south, and are now driving a cross-cut eastward, with a view to discover the lode. In the 30 fm. level a tip-plat has been cut, and a tram-road for 25 fms. from the shaft laid down; we shall have to stope some ground in the back of the level before we can complete the lode to the end; this will occupy about a fortnight; but we intend to return driving the end in the course of a day or two. We are progressing favourably in clearing Glynn's shaft, and are now about 40 fms. from the surface. The pitches are not looking quite so well as they did, and the tribute is advanced, on an average, to the extent of 1s. in 1*l.*—the average price being about 8s. in 1*l.* for lead only, the silver not being taken into consideration. The ends generally being easier for driving, we have much more ground laid open than has been taken away; and it affords me much pleasure to add, that there is every probability that our samplings will continue to increase.

SOUTH WALES MINES.—Our pay and setting was on Saturday last, the 29th December, and the following is an account of the latter:—The deep adit, east of the Rhydnet river, on the south (or Frongoch) lode, by six men, 6 fms. stent, or the month at 4*l.* per fm., lode much the same as last reported, being 9 or 10 ft. wide, composed principally of mundic, quartz, white clay, and a little lead. The winze to sink under the deep adit, by six men, 4 fms. stent, or the month at 7*l.* 10s. per fm.; lode 6 ft. wide, composed principally of mundic, quartz, clay, and a little lead, and has, on the whole, a very promising appearance. The shallow adit, east from surface, by four men, 8 fms. stent, or the month, at 2*l.* per fm.; the lode is very large, composed of a good gossan, mundic, quartz, clay, &c. We have finished building the smiths' shop.

SOUTH WHEAL JOSIAH.—We are still driving the adit end, and have a large promising lode, with some mundic and a little black ore. In the winze sinking we have a fine lode 3 ft. wide, with good work for ore in it—saving work. We find the water very little in sinking; the prospects here are very encouraging. They have a good lode at Heigneston Down Consols immediately adjoining us, and our mine occupies the whole of the ground between Devon Great Consols and Heigneston Down.

SOUTH WHEAL TRELAWNY.—The men have sunk the engine-shaft 2 fms. 3 in. within the last month, thereby making the fork 9 ft. 3 in. below the bottom of the 50 fm. level, the ground in which is a beautiful dark blue killas stratum, and can again be sunk at the rate of 12*l.* per fm. The ground in both cross-cuts (east and west) is favourable, being set to drive at 4*l.* 10s. per fm. The water is a little quicker, and the machinery in excellent order.

TAMAR SILVER-LEAD.—The engine-shaft is sunk 12 fathoms below the 190 fm. level; the lode is standing in the western side of the shaft, which we do not intend to cut through until we commence driving in the 205; in the 190 end, driving south, the lode is 1 ft. wide, opening profitable ground. In the 175 end the lode is 16 in. wide, 6 in. of which is good work. In the 160 end the lode is 1 ft. wide, composed of flookan and ore, producing work of a promising character. In the 145 end the lode is 2 ft. wide, interspersed with ore; in the winze sinking in the bottom of this level the lode is 2½ ft. wide, 1 ft. of which is work of a good quality. At the north mine, the engine-shaft is sunk 3 fms. below the 80 fm. level; in cross-cutting this level we have not yet cut the lode. In driving south, in the 70 fm. level, the lode is 3 ft. wide, and producing work of a promising description; in the winze rising in the back of this level the lode is 5 ft. wide—good stamps work. We intend to sample about the middle of next week, and expect the quantity will be about 90 tons.

TINCROFT.—On Highburrow tin lode, in the 152 fm. level, east of engine-shaft, the lode is 5 ft. wide, worth 35*l.* per fm. In the 142 fm. level, east of Martin's east shaft, the lode is 4 ft. wide, worth 16*l.* per fm.; the stopes east of the shaft are worth 16*l.* per fm. In the 132 fm. level, east of Martin's east shaft, the lode is 4 ft. wide, worth 17*l.* per fm.; the stopes in the back of this level are worth 18*l.* per fm. In the 120 fm. level, west of engine-shaft, the lode is 3½ ft. wide, worth 12*l.* per fm. At North Tincroft, in the engine-shaft sinking below the 100 fm. level, the lode is 4 ft. wide, worth 16*l.* per fm. for copper. In the 100 fm. level east the lode is 3 ft. wide, worth 10*l.* per fm. for copper; in the west end, same level, the lode is 4 ft. wide, worth 10*l.* per fm. for copper. In the 90 fm. level, east of Willoughby's shaft, the lode is 4 ft. wide, worth 12*l.* per fm. for tin and copper. In the 90 fm. level, west of engine-shaft, the lode is 3 ft. wide, worth 18*l.* per fm. for copper; in the winze sinking below this level the lode is 3 ft. wide, worth 15*l.* per fm. for copper. In the 80 fm. level west the lode is 4 feet wide, worth 8*l.* per fm. for copper. On Chappie's lode, in the 100 fm. level, east of Downright shaft, the lode is 3 ft. wide, worth 7*l.* per fm. for tin and copper; in the west end, same level, the lode is 4 ft. wide, worth 14*l.* per fm. for copper. In the winze sinking west of the shaft, below the 70 fm. level, the lode is 4 ft. wide, worth 12*l.* per fm per copper. In Palmer's shaft, sinking below the 90 fm. level on East Pool lode, the lode is 3 ft. wide, with spots of ore. In the 90 fm. level west the lode is 2½ ft. wide, worth 5*l.* per fm. for copper. In the 70 west the lode is 2 ft. wide, worth 9*l.* per fm. for copper. We have communicated Stainsby's shaft with the 36 fm. level, and have commenced to cut plat, &c. In the 24 fm. level west the lode is 1 ft. wide, with spots of ore; in the winze sinking below this level the lode is 2 ft. wide, worth 24*l.* per fm. for copper. At Wheal Providence, in the engine-shaft sinking below the 33 fm. level, the lode is 2½ ft. wide, with spots of ore.

TRELEIGH CONSOLS.—The 125 cross-cut at Garden's is suspended. In the 100, west of Garden's, the lode is 2 ft. wide, kindly, with stones of ore. In the 90, west of ditto, the lode is 18 in. wide, with good stones of ore, and is looking more kindly. In the 80, west of the cross-cut, on the north part, the lode is 3 ft. wide, worth 20*l.* per fm.; in the 80, west of Garden's, on the south part, the lode is 2 ft. wide, with stones of ore. In the 70, west of Garden's, the lode is 3 ft. wide, with good stones of ore. At Wheal Parent, the engine-shaft below the 40 is set now; in the 40, east of ditto, the lode is 2½ ft. wide, with stones of ore; the 40, west of ditto, is suspended; the 40 cross-cut south is driving towards the middle lode. In the 30, east of the engine-shaft, the lode is 2 ft. wide, worth 3*l.* per fm.: the 30 west of ditto is suspended; the winze below the 30, set on tribute at 5s. in 1*l.*, is stoping east from ditto; on the middle lode, the adit, east of Nicholson's shaft, is set on tribute at 10s. in 1*l.*

WELLINGTON.—The lode in the 42 fm. level is still in a disordered state driving east, and the men at present are driving north, to ascertain if there is any other part of the lode north of us; in the west end of this level the lode is 8 in. wide, but poor. The lode in the 32 fm. level, east of Parcolly's shaft, is from 12 to 18 in. wide, yielding 1 ton of good quality ore per fm., and has been just as it was since my last writing to you. The lode in the 22 fm. level, east of said shaft, is about 15 in. wide, and from the back of the level down 2 ft. is good saving work for copper ore; the lode here is improving. There is no change on the north lode; it still continues just the same in size and appearance, being about 2½ ft. wide. There is no change in any other part of these mines.

WEST WHEAL JEWEL.—The 85 fathom level, west of Williams's cross-course, on Wheal Jewel lode, is worth 4*l.* per fm. In the 70 fm. level, west of ditto, the cross-course on same lode, when last taken down, was worth 20*l.* per fm. In the 57 fm. level, west of ditto, the cross-course on same lode is 18 in. wide, producing stones of ore. The 47 fm. level, east of ditto, the cross-course on same lode is worth 5*l.* per fm. The 12 fm. level, west of Tregoning's shaft, on Tolcarne tin lode, is producing stones of tin. In the deep adit west of ditto shaft, on same lode, the lode is looking very promising for tin. The stopes in back of 12 fm. level, west of Pryor's winze, on same lode, are worth 10*l.* per fm.; the stopes east of this winze, in back of same level, are worth 14*l.* per fm.; the stopes in bottom of 12 fm. level, east of Tregoning's shaft, are worth 25*l.* per fm.; the stopes in bottom of this level, east of ditto winze, are worth 23*l.* per fm. These stopes are working on tribute.

WHEAL PENHALE.—In reporting to-day on this mine I beg to say the lode in the north end, 36 fm. level, is improved in size and appearances this week; in fact, I cannot say what its size is, we have got 4 ft. into it, and are not through it yet—it produces beautiful copper ores; south, in this level, we have been cross-cutting to the lead lode; I think we have from 5 to 6 ft. more to cross-cut ere we shall intersect it—beautiful veins of lead are found in the country. In the north end, 20 fm. level, we have a good lode in lead and copper; in the cross-cut, driving west from the south end, the ground is hard. In stripping down the middle shaft from the adit to the 10 fm. level, the lode still holds down very promising, yielding very good stones of lead and copper. The tribute pitches in the 20 fm. level are looking very well, but those in the levels above are not so promising. In looking over the report book, I find I omitted in my last setting report to state that we had let the tribute pitches for two instead of one month, as a preventative against the waste of time, which is invariably the case, of two or three days, at the closing of a tribute set in clearing up, &c. The same parties purchased the lead and copper ores—*i. e.*, Messrs. Sims, Willyams, Nevill, and Co.; the lead at 10*l.* 12s. per ton, and the copper at 4*l.* 1s. per ton.

WHEAL SARAH.—We are sinking Mayhew's shaft; the ground is good for sinking, in a beautiful blue killas; water very easy. We have cleared up the old engine-shaft in the 30 fm. level, and began to case and divide down the shaft to the 30. We are also working on a fine course of lead in the shaft between the 20 and 30. We are also raising good lead at the back of the 20 north and south. We have also set a pitch on tribute at the back of the 16, at 10s. in 1*l.*, with a very fine course of blue and white lead in sight. We are getting on as fast as possible with the dressing-floors and grinder. There is no doubt of the mine paying her cost, and giving profits, after the grinder is at work, and our floors in course to dress the ores, as we have a great quantity of lead at surface, and a great quantity in sight underground ready to bring to surface. The engine keeps the water easy, considering the heavy rains we have had of late.

WHEAL TRELAWNY.—In the 82 end, north of Phillips's shaft, the lode is 3 ft. wide, worth 10*l.* per fm.; in the 82, south of ditto, the lode is 3 ft. wide, worth 5*l.* per fm. In the 72, north of ditto, the lode is 2½ ft. wide, worth 8*l.* per fm. We deem it advisable to suspend the 72, south of ditto, until we have a less quantity of water to contend with, and which end is within 4 fms. of the boundary. In the 62, north of ditto, the lode is 3½ ft. wide, worth 13*l.* per fm. Trelawny's shaft is in course of sinking below the 82 fm. level. The cross-cut in the 82 is driven west towards the lode 6 fms. 2 ft. In the 72 end, north of ditto, the lode is 2½ ft. wide, worth 8*l.* per fm. In the 52, north of ditto, the lode is 3 ft. wide, worth 7*l.* per fm. At the north mine, the lode in the 55 end, north of Trehane, is improving in size, and we expect shortly to have to report an improvement in quality. The 40 end, north of Smith's, is still disordered by slides. Our stopes are yielding just the same as usual. We sold on Monday last a parcel of lead ores, 102 tons, computed, at 18*l.* 13s. 6d. per ton, to Thomas Somers, Esq., Bristol.

WHEAL VINCENT.—Since my last report we have cut into the north lode and I am happy to state it produces some very good work for tin, and is completely clear of wolfram; it is what is termed by the miner "easom tin;" I hope in my next to be able to state more fully respecting its size, &c. In sinking No. 2, on the south lode, we are still breaking rich work, and likely to improve as it goes down. In driving the bottom end, west of the shaft, there has been no lode taken down since last report. In sinking and stoping at No. 3, the lode is also producing some good work for tin. The ground in the deep adit, on the south lode, is somewhat improving, and a great deal of water proceeding from the end. Our stamps are beating out some excellent work.

FOREIGN MINES.

IMPERIAL BRAZILIAN MINES.—*Bananal, Oct.* 23.—During the last 10 days nothing calling for particular notice has occurred here—the dispatch making in the different works is tolerably satisfactory. The sinking of Gibson's shaft is progressing well, and the vein (Big-Pump) in the bottom of it is of a very promising character, and has lately produced a few boxes of coarse work for the washing-house. We intend driving the 14 fm. level on this vein, as soon as we can do so without impeding the sinking of the shaft; this, from the encouraging samples we have taken, will, I hope, open auriferous stoping ground in the back of that level. The Magalhaes vein we have yet not been able to sink on under the 14 fm. level, but shall do so when Gibson's shaft is sufficiently advanced in depth to effect the drainage. You will please observe by the captain's report, that Gibbes's shaft is going down rapidly; the shaft, when completed to the 14, will effect a great saving in materials and horse labour, and will also greatly facilitate our underground operations, as we cannot at present haul away as much stuff as we ought to be breaking, owing to the very bad state of Thomas's underlaying shaft, and which is the only one we have now in use for hauling purposes. The little increase in the produce of gold for the last ten days has been derived solely from the Big-Pump vein, in sinking Gibson's shaft.

Gongo Soco.—The open cutting is progressing; it has reached Goldsmid's stamps, which is now taken down, and removing to make room for our work. Its next position I have not yet decided on, but it will be re-erected as early as possible. We have cut down and burnt a great deal of the brush wood in the western part of the mine—that portion of it called the peak—and to which great importance was attached, has been completely laid bare, so as to enable us to make a thorough search, which I intend doing during the ten days. In the trial levels driving in the western part of the mine there has not yet been any discovery, but I intend to keep the great western stamps to work on any of the jacotinga that is likely to produce gold, as by this means, very probably, discoveries of importance will be made. The returns of gold during the last ten days have been principally derived from the stuff about Goldsmid's stamps, which will soon be exhausted. The great western stamps has given 3 ozs. 4 dwts. from the large body of jacotinga, which forms the base of the peak.

Nov. 3.—I have great pleasure in informing you that during the last ten days, we have had an improvement in the general prospects of the mine. Several boxes of work have been taken from different places for the washing-house, the principal part of which was from the Big Pump vein in the bottom of Gibson's shaft; some very rich but small lumps of gold were extracted, which has given us very great encouragement. The boxes of work and specimens produced 3 lbs. 3 ozs.

It will be seen by a reference to the accompanying captain's report, that our works are progressing favourably. Gibson's shaft will soon be deep enough to drain Thomas's shaft, and from whence we hope to derive a considerable addition to our returns.

Gibbes's shaft is going down rapidly, and is very much wanted for the extraction of stuff from the mine: the driving under it, as recommended by the captains, I have ordered to be commenced, and which I consider will greatly facilitate its completion to the 14 fm. level. The operations for the erection of the iron wheel is going on satisfactorily. A great part of the timber required for it has been brought in from the Piaol estate. A part of the framework has been fixed in the pit, and the masons are actively engaged in building the walls. This machinery will be ready to work quite as soon as it will be required, as from the little alteration we have made in the pitwork, we find no difficulty whatever in keeping out the water with the present machinery; and with the extra power of this new wheel, I think we shall be able to dislodge a much larger quantity than we have at present, or I hope ever shall have, in the mine. It will, however, be necessary, at some future period, to put a new wheel, of larger dimensions, on the fall now occupied by Thomas's, the latter being in a very rotten condition, and not of sufficient diameter to occupy the whole fall. By this arrangement we shall acquire great additional power, which, if not required for pumping, may be applied to hauling or stamping. Our present stamps is a very poor machine, and badly situated, as the water to work it must be taken from the head of the stream—consequently depriving the corn-mill, saw-mill, and Gibson's wheel of a great part of their power. About the latter end of this month I intend to dispatch our mule troop to Rio with the gold.

Gongo Soco.—I am happy to state, that our produce here is much greater than it has been for some time past, principally derived, however, from the old foundation of Goldsmid's stamps, which is now taken down, and removed for re-erection. Our experiments at the great western are not yet very successful. We have during the past 10 days stamped about 60 tons of stuff from the peak, but found it poor, yielding only 1 oz. 6 dwts. of gold; this, however, will not discourage us in our researches in the western part the

mine. Capt. Guy's report, which I send herewith, will explain in part what we are doing but the open cutting is our principal object, and is progressing very favourably.

P.S.—Since writing the foregoing, some boxes of work have been extracted from the bottom of Gibson's shaft, which has given several rich and otherwise promising specimens; a greater portion of the work yet remains to be washed.

GOLD REPORT.

From Gongo from 13th to 20th October	*Lbs.*	3	6	1	0				
,, 22d October to 2d November		5	11	5	0	9	5	6	0
From Bananal, from 13th to 22d October		2	8	14	0				
,, 23d October to 2d November		5	6	13	0	8	3	7	0
Total	*Lbs.*	17	8	13	0				
Total from the 1st July, 1849—Gongo	*Lbs.*	43	6	0	0				
Bananal		26	7	16	0	69	1	16	0

LINARES MINES.—Letter from Mr. Henry Thomas, dated Dec. 22.—We continue with the work advised in my last, and expect after this week to have the 30 fm. level sufficiently cleared east of the engine-shaft to set two or three more tribute pitches. The tributers require some patient instruction to get them into our English way of working, but after a little time I have no doubt of our finding work by tribute to succeed very well. We are preparing the ground over the San Gaspar winze, to enable us to drop the pumps therein, which we shall be able to do at once (or rather after the connection is made to the engine) for 8 fms., to which depth the winze is clear. We have also some ground to cut, to make a connection with the rod in the shaft, which will take some days; the balance-bob is progressing, and I hope, ere long, to report that we have recommenced sinking. All accounts agree, that the third level is much more productive than any part of the mine we have yet seen. The men are rapidly cutting down the shaft over the Calavera winze, so that if we are fortunate enough not to meet with hard ground we may expect to have it complete to the second level in a fortnight.

ROYAL SANTIAGO MINING COMPANY.

At the half-yearly meeting of this company, held at the offices, Broad-street Buildings, City, on Wednesday, the 2d instant, for receiving the report of the directors, and for election of a new director, in the room of Sir S. Scott, Bart., deceased, BARON DE GOLDSMID in the chair.

The SECRETARY read the following report:—

In laying before the proprietors the usual half-yearly statement of the affairs of the company, the directors cannot state that any important discovery has been made in the several pertenencias. The directors desire to remind the proprietors that, about two years ago, they resolved to develope the resources of certain mines which had produced ore; Snow's shaft being in one of these pertenencias, was, therefore, sunk to the depth of 60 fms., and cross-cuts extended from it to prove the Descubierta, the St. Patrick, and the Buena Esperanza Mines, the veins of which have yielded 3 to 8 tons of ore per fm., but latterly these have become almost unproductive, and the strata unpromising, which circumstances have induced the manager to suspend the workings in them. The prospects of ore from the Trevince Mine, as reported at the last meeting, have not as yet assumed a permanent and productive character. The lode disappeared at the 54 fm. level; the shaft, however, has since been sunk to 64 fms., and a cross-cut from it has intersected a lode yielding ore, but of inferior quality; there will, however, be a much greater length of mineral vein than in the upper levels, and consequently the value of the mine may become greatly enhanced. The produce of this mine, and the ore which is now found in breaking new ground in other pertenencias, form the principal means of meeting the expenses of the current half-year. The argentiferous mines, situate a few leagues from Cobre, and alluded to in a former report, became unproductive, and the workings were discontinued in July last. The force has also been withdrawn from the mines at Holguin. The veins became small and disturbed as the depth of the workings were increased; and the great distance from the establishment considerably augmented the expenses, and rendered their abandonment expedient. About 30 tons of ore have been extracted, and sent to St. Jago de Cuba for shipment to Swansea. The operations in the Emperatriz and Aventurera Mines have been partially stopped by the influx of water. The manager reports that powerful steam machinery, and a large outlay of capital, will be required to explore these mines efficiently, which the present appearance of the lodes would render inexpedient. The manager is proceeding with opening a large lode discovered in the Ermitano mines, and from which a small quantity of rich ore has been already extracted. The quantity of ore raised in the half-year, ending 31st August last, amounts to 1011 tons, of which 464 tons were sold in June and July last, and produced net 4600*l.* 7s. 3d.; 426 tons were sold last month, which, with 121 tons in the *Sunbeam*, daily expected to arrive, and estimated to produce 3227*l.* 6s. 2d., making, with the interest upon the loans, an aggregate of receipts, as per annexed account, of 7996*l.* 9s. 5d. In the subsequent months of September and October 360 tons of ore have been extracted from the Trevince Mine alone. The expenditure for the half-year, which includes the cost of workings for discovery in the old mines and newly acquired pertenencias, amounts to 9569*l.* 5s. 8d. In pursuance of the arrangements made with the Cobre Company, the deeds, which have been mutually signed, were remitted to St. Jago for completion according to the mining laws of Cuba, but they have not yet been returned, or the consideration received from the Cobre Company. The directors have to lament, in common with the proprietors, the decease of their esteemed friend and colleague, Sir Sam. Scott, Bart.; and it will be the duty of the proprietors this day to elect a successor. John Taylor, Jun., Esq., is the only proprietor who has offered his services; and as he is extensively connected with mining operations, they recommend him to the proprietors for election.

The accounts, as under, were also read to the meeting.

Abstract of Balances, December 31, 1849.

Money at interest—at bankers and Bank of England	£19,964	3	5		
Copper ore at Swansea, and in the *Sunbeam*, net	3,227	6	2	23,191	9 7
Amount drawn by agent at the mines, and other items of expenditure for the current half-year, ending February 28, 1850				4,666	14 4
Steam machinery account, &c.				979	2 7
Profit and Loss Account—Loss for the half-year ending August 31, 1849, (particulars as under *)				1,572	16 3
Total				£30,410	2 9
Working capital account, February 28, 1849				£23,298	0 5
Bills payable—being current acceptances				6,008	5 2
Unclaimed dividends				81	5 0
Due to sundries at date				1,022	12 2
Total				£30,410	2 9

* *Profit and Loss Account—Half-year ending August* 31, 1849.

Wages, arriage, export duty in Cuba, materials, and miscellaneous expenses, as per accounts on the table	£	9569	5 8
Net proceeds of 92 tons, per *Sir I. L. Goldsmid*	£	359	7 0
Net proceeds of 372 tons per *Sunbeam*		4241	0 3
Estimated ditto 426 tons, per *I. L. Goldsmid*		1847	16 8
Ditto ditto 121 tons, per *Sunbeam* — 1011 tons.		1379	9 6
Interest on loans		168	16 0
Loss on the half-year		1572	16 3
Total	£	9569	5 8

The CHAIRMAN moved that the report now read be entered on the minutes, in doing which he should not deprive any gentleman of the opportunity of making what observations he might think proper upon that report. He dare say they wished to understand in more plain terms what the directors meant by this document. (Hear, hear). The substance of it was that in the half-year they realized 7986*l.* 9s. 5d., and they had spent 1600*l.* beyond that sum. If they had confined themselves to working the Trevince Mine, and had not gone upon any other discoveries, they would, instead of losing money, have gained a small profit in that quarter; but the directors had thought it advisable, and they were told so at the last half-yearly meeting, to extend their mining operations, with a view to find out some mode of increasing the income of the company, and of affording a resource to which they might look, some time, for a handsome dividend. He would call the attention of the proprietors, in the first instance, to a circumstance which he and his friend, Mr. Alderman Thompson, particularly deplored—that was the loss of their honourable friend, Sir Samuel Scott, Bart. (Hear, hear.) He had no doubt it would be felt seriously by the proprietors also. (Hear, hear.) That lamented gentleman was particularly agreeable to them by his urbanity of manners, and he was one who if he differed on any subject with his colleagues, always did so with such good temper and kindness as made him really a most amiable man. (Hear, hear.) The next point was how that vacancy ought to be filled up. The directors, with that view, had selected a gentleman who was thoroughly acquainted with mines, and understood those of this company, whom they considered would be of great service to them all, and under that impression they thought they could not do better than submit the name of Mr. John Taylor, jun., for their approval, as he had consented to act and to give his best attention to their affairs. He would ask them if they would give their approbation to Mr. Taylor. It would be seen from the report, that they had extracted 360 tons of ore in September and October from the Trevince Mine; if they went on in that way for two months, there would be sufficient to pay their expenses, and leave a small balance for themselves. They had, this half-year, settled with the Cobre Company, with whom they had a long and difficult affair, as must be known to the proprietors, and would now receive from that company 5000*l.*, which was claimed with a view to settle all disputes. It was the interest of both companies to understand each other, and he was sure a feeling of amity would exist on the part of this company. Looking at all things, he thought, without being fixed to anything certain, in a branch of industry so changeable as mining, there would be much more prosperity for them than they had seen at present; he must, however, be understood to use these words very cautiously. The directors would receive this 5000*l.*, of which they would anticipate an outlay of 1500*l.*, or thereabouts, so that they could not at present promise a dividend; in fact, it would be very impolitic to do so at present, in his opinion; but he hoped to give them a dividend on the next occasion. In conclusion, he would ask them to approve of this report; and if no gentleman had any question to put, he would move to that effect, and simply express a hope that they would all find themselves in a far better situation by the next half-yearly meeting.

Dr. SNOW seconded the motion, and said that the report and explanation given by the chairman were so elaborate, that several questions he intended to put had been anticipated. It must have been pleasing to the proprietors, to have observed that the negociations with the Cobre Company had been brought to a satisfactory issue. It was anticipated by most of the proprietors of the Santiago Company that, instead of receiving payment from the Cobre Company, they would have to pay some large sums themselves. (Hear, hear.) It was, therefore, very satisfactory to him to find that the directors had so ably negociated this business, as to secure to them 5000*l.*, when a result quite contrary was anticipated. He hoped by the next half-yearly meeting the directors would be able to announce to them a dividend; and if they had not the pleasure of receiving such on this occasion, they could not attribute any blame to the directors, for mining was an uncertain thing, to which they must submit, as well as the shareholders.

The CHAIRMAN observed, that the directors thought they were entitled to 7000*l.* from the other company, but they had agreed to 5000*l.*, with a view to close all questions at issue. (Hear, hear.) The directors thought still that they are entitled to the mine in dispute, although they had agreed under all the circumstances, and to promote amity between the two companies, to give way to the Cobre Company. They were asked, and they assented.

The SECRETARY, in answer to a proprietor, said 21,800*l.* was the amount of capital in hand, after deducting the loss on the half year.

The CHAIRMAN observed, that this, with the 5000*l.*, would make up about 26,000*l.* of floating capital. This was important, as the directors would not be obliged to call upon the shareholders for anything for that purpose.

Mr. HALLETT asked, if they had any report of the ore raised in September or October, mentioned at 360 tons?—The SECRETARY said, they knew it was stone ore, ragging ore, and dust ore; the assay is 13 to 14 per cent. of the dust ore, and about 22 per cent. of the ragging and stone ores. (Hear, hear.)

The CHAIRMAN considered that a very fair proportion.

Mr. HODGKINSON asked, how many hands they had at the time of the last report?—The SECRETARY replied, they had 21 Englishmen and 159 negroes.

Mr. HODGKINSON asked, where the ore was raised?—The SECRETARY said, in September and October, from the Trevince Mine only. It was at the south of the village, a long way from the river, and adjoining the Maria Louisa.

The report was then adopted unanimously.

Mr. HODGKINSON asked for the extent of the ground where this ore was raised?—The SECRETARY said, the mine was 200 by 100 varas; but the levels did not extend the whole length of the pertinencia.

The CHAIRMAN (in consequence of some allusion to Mr. Hodgkinson having concerns with the Cobre Company) said, he was glad to hear it, and hoped that gentleman would convey to the Cobre Company the perfect goodwill and amity with which the directors of the Santiago Company were prepared to act in future. (Hear, hear.).—John Taylor, jun., Esq., was then elected unanimously in the place of Sir Samuel Scott, Bart., deceased.

Mr. TAYLOR was much obliged for the flattering way his name had been mentioned by the chairman, and the way he had been elected by the proprietors. He was certainly well versed in mining, and should be happy if he could in any way improve the mines of this company. He had gone over the plans of the property in company with the secretary; and he was of opinion that they had a most valuable field for operations. Parties were equally on the search on the part of the Cobre Company, and their discoveries might lead to that which would benefit the mines of this company also. As he was now a director, he would pledge to give his best attention to the correspondence, and would at all times do the best in his power to advance the interest of the company. (Hear, hear.)

Mr. HODGKINSON said, he had been offered some mining property on the south side of Cuba. He did not understand why this company should limit itself to Cobre alone, as if other ores and other places might not be as beneficial to the company.

The CHAIRMAN observed, that the directors would listen to any further advice on the subject.

Dr. SNOW would beg to move a vote of thanks to Baron de Goldsmid and Mr. Alderman Thompson for their able management of the company's affairs hitherto. He was not aware till after Mr. Taylor had been elected that he had any personal knowledge of him and his family. From this circumstance he would quite subscribe to the expression of the chairman, as to the value of Mr. Taylor to this company. (Hear, hear.)

Mr. HODGKINSON would beg to second the motion. He thought the directors were deserving of great credit for the way in which they had settled their affairs with the Cobre Company.

The CHAIRMAN returned thanks, and the meeting separated.

CALLINGTON MINES COMPANY.

The quarterly meeting was held at the offices, Salvador-house, on Wednesday, the 2d inst., RICHARD HODGSON, Esq., in the chair.

The advertisement convening the meeting, and the proceedings of that last held, were read.

The CHAIRMAN, with some few prefatory remarks, then read the reports of Mr. Johnson and the agent's, at the same time remarking that, although the results were not such as might have been anticipated by the shareholders, yet he believed, with judgment and economy, and by reducing the cost at Kelly Bray, that the mine would be rendered productive. He deemed it only right he should announce to the meeting that a further call had been made that day.

DIRECTORS' REPORT.

The several operations which were submitted for your consideration at the last general meeting, have been actively carried into execution under the superintendence of Mr. P. N. Johnson, whose report will minutely detail the progress and result thereof. It is satisfactory to mention, that on the tribute department in the south mine abstractedly, 430*l.* profit has been realised during the last six months; and, although this amount has been absorbed in the tutwork operations, there is reason to expect that such work will ultimately prove profitable. The north and south mine present some encouraging indications. The progress of the diagonal shaft is being expedited; and the agents anticipate an increase of returns when the lode is cut in the 125 fm. level, and the diagonal shaft sunk thereto. On the Kelly Bray lode the operations have been circumscribed to driving the 70 fm. level; here the ground driven will work to advantage, when sufficient ventilation is procured; the lode is 2½ ft. wide, composed of the most kindly qualities, consisting of blende, peach, mundic, fluor-spar, and excellent quality copper ore, producing 2 tons per fathom. The total quantity of ground explored in driving, sinking, and rising, during the last three months, amounts to 121 fms. 1 ft. 4 in.; and, although the work is being conducted with energy, every operation is considered with the most careful regard to economy and immediate profit, so that the cost may be reduced by all practicable means. Mr. Johnson has deemed it expedient to consult with Capt. Sprague upon the system of working now adopted at the mines, and he, in common with the other agents, and in agreement with Mr. Johnson's conviction, has concluded that the present plan of operations is the most economical and judicious that could be adopted for beneficial results. The directors are exercising the utmost care in superintending the property of the company, and will continue to do so, they trust, to a profitable issue.

The report of Mr. P. N. Johnson was read, from which it appeared that—

The tribute department of the south mine had yielded a profit of 430*l.* during the past six months, but the tutwork cost had more than absorbed that amount; the latter workings had been suspended, except driving the 112 fm. level north, so as to relieve the engine at the north mine. At the north mine it appears there is some 120 to 130 fms. driven on good ore ground; the present operations are confined to opening the ground in driving the 112 fm. level north and south, and the cross-cut, so as to take the lode in the 125, and sinking a diagonal shaft on course of lode in the 80, which is now down about 12 fms., and will afford most economical means of drawing the ore to surface; and at same time affording better ventilation, whereby some tribute pitches may be set to advantage. With respect to Kelly Bray, Mr. Johnson stated he had suspended all operations, excepting driving the 70 fm. level, the water being kept by the engine at the north mine; the cost might be estimated at from 20*l.* to 25*l.* per month; and although it had produced from three to four tons per fm., did not now exceed one-fourth of that quantity; the character of the lode was, to use the ordinary term, congenial for copper. The north mine was being worked with energy, and every prospect presented of beneficial results.

The report of Mr. Johnson, in general terms, spoke highly of the mine, and holding out to the shareholders every encouragement.

The following report, from Capt. Nancarrow, was also read to the meeting:—

Dec. 29.—Agreeable to your request, we beg to hand you our report of the above mines, with a detailed statement of operations since last general meeting. At the North Mine, the 125 fm. level cross-cut west has been driven 5 fms. 3 ft. 3 in. through ground, averaging in price from 10*l.* to 11*l.* per fm. The 112 fm. level north has been driven 16 fms. 0 ft. 4 in., through ground of a moderate tribute character; also 4 fms. 3 ft. have been risen in the back of this level. The 112 fm. level south has been driven 15 fms. 2 ft. 9 in., opening good tribute ground; the present end will produce from 4 to 5 cwts. of silver-lead ore per fm.; we have also risen 5 fms. 0 ft. 6 in. in the back of this level, and communicated with the level above. The 100 fm. level north has been driven 4 fms., but is suspended, being within 7 or 8 fms. of Holmbush sett. The 90 fm. level south has been driven 4 fms. 5 ft. 3 in., through good tribute ground; the end is being driven at present as a tribute pitch (8s. in 20s.). The count-house shaft has been sunk 5 fms. 2 ft. 6 in. below the 90 fm. level, and completed to the 100 fm. level—plat, &c., cut. The diagonal shaft has been sunk below the 80 fm. level 5 fms.; we calculate it will take the first week in January to complete this shaft to the 90 fm. level. At the Kelly Bray lode, in the 90 fm. level west, 3 fms. 0 ft. 9 in. have been driven. In the 50 fm. level east, 5 fms. 6 ft. have been driven. In the 20 fm. level east 3 fms.; and Kelly Bray engine-shaft sunk 1 fm. 5 ft. 6 in. All these bargains are, for the present, suspended. The 70 fm. level east, on Kelly Bray lode, has been driven 8 fms. 5 ft. 6 in., through ground that will work to advantage when we have sufficient air to stope the back; the lode in the present end is about 2½ ft. wide, composed of blende, peach, mundic, fluor-spar, and excellent quality copper ore, producing 2 tons of the latter per fm. At the south mine, the 125 fm. level south has been driven 8 fms. 5 ft., opening ground that will work at a high tribute. The 125 fm. level north has been driven 2 fms. 5 ft. 6 in.; this end has been suspended. The 112 fm. level south has been driven 2 fms. 5 ft. 6 in., opening ground of a moderate tribute character. The 112 fm. level north has been driven 10 fms. 2 ft. 9 in., opening tribute ground; at present, the lode in the end is disordered by the cross-course; also 5 fms. 0 ft. 3 in. has been sunk in the bottom of this level, and a communication made with the level below: 2 fms. 1 ft. 6 in. have been driven in the 90 fm. level south, and 3 fms. 5 ft. 6 in. in the 40 fm. level south; both these ends are suspended. The total number of fathoms driven, sunk, and risen, during the last three months, is 121 fms. 1 ft. 4 in. In conclusion, we would beg to remark that our prospects are quite as good as at the last meeting, especially in the North Mine. We calculate it will take us about three months from the present time to cut the lode in the 125 fm. level; and when this has been accomplished, together with the diagonal shaft being sunk to the latter level, we may calculate on increased returns.

The accounts submitted were from May to Oct., showing a sale of 175 tons 3 cwts. 3 qrs. averaging 16*l.* 10s. per ton, the tribute being at the rate of 8s. 9¼d. It appeared that, at Kelly Bray, the costs had been 651*l.* while the returns had only been 167*l.*; that with regard to the north mine, the costs of tributers was 1241*l.* 8s., leaving a balance on the six months in favour of the shareholders of 434*l.* 10s. 2d.

In answer to a question from a proprietor, the CHAIRMAN stated that the mine was 3600*l.* in debt; but that the value of the materials and plant was far more than would cover that amount.

Mr. JAMES expressed his perfect confidence in the undertaking, and paid a high compliment to Mr. Stainsby for his assiduous exertions, as well as to Mr. P. N. Johnson, whose report he considered highly satisfactory; at the same time that he considered the thanks of the shareholders were due to him.

Mr. JOHNSON expressed his opinion that the shaft should be sunk 30 fms., which he considered might be done for something like 400*l.* It should be observed that, as regarded the charge on Kelly Bray., there was that of water-cost from the north mine, although he might observe that the several mines were, in fact, one concern. Kelly Bray might be worked at 20*l.* per month; and he suggested that the 70 fathom level should be driven for three months (producing, at the same time, a stone of ore which had been taken from the end, of 12 to 14 produce). The lode had yielded 2 tons per fm.; and, although it might be a question as regards the policy of employing capital at the present time in sinking the shaft; yet he considered the 70 fm. level should be driven, and that, in the end, those results would be arrived at which had been previously contemplated.

In reply to an inquiry from a PROPRIETOR, it appeared that the costs for the three months, ending in September, amounted to 2600*l.*; while the returns were 2200*l.*

Mr. P. N. JOHNSON, in reply to a shareholder, stated, that he estimated the returns at 40 tons per month, which, at 17*l.* 10s., was equal to 700*l.*; while the monthly cost was 800*l.* He believed, however, that by reduction of the workings at Kelly Bray, and opening ground before them, that the balance would be on the other side.

The specimen placed on the table by Mr. Johnson, we found combined with the ore fluate of lime and felspar, and was of a highly promising character.

Some general conversation took place; and, after thanks having been given to the chairman and directors, the meeting separated.

Statement of Accounts for three months, ending with September cost, 1849.

EXPENDITURE.

To balance from last account			£1639	2	11			
Amount of July cost		£912	13	2				
Ditto August cost		928	16	6				
Ditto September cost		792	11	11	—2634	1	7	
Interest and discount					17	3	2	
Disbursements—Directors' attendances, 62*l.* 10s.; London management, 50*l.*; petty cash, 9*l.* 8s. 1d.					121	18	1	—£4413 5 9

RECEIPTS.

By silver-lead ore, July returns			£	770	5	9		
Ditto August returns				694	4	7		
Ditto September returns				725	12	10	—2190	3 2
Balance								£2222 2 7
(By September subsist			£80	0	0.)			

KELLY BRAY DEPARTMENT.—EXPENDITURE.

Balance from last account			£1761	19	6			
Amount of July cost		£225	11	1				
Ditto August cost		217	1	11				
Ditto September cost		208	13	0	—651	6	0	—£2413 5 6

RECEIPTS.

By copper ore			£	167	18	10		
Twenty-third instalment				1000	0	0	—1167	18 10
Balance								£1245 6 8

EAST CROWNDALE MINING COMPANY.

The annual meeting of shareholders was held at the offices, New Broad-street, on Monday, the 31st of December.—THOMAS HARRISON, Esq., in the chair.

Mr. COLE (the secretary) having read the notice convening the meeting, also the minutes of the last annual meeting, which were confirmed, read the following report of the committee, and statement of accounts:—

The committee, at the last annual meeting, informed the shareholders that, owing to the difficulty they had experienced in obtaining a suitable spot for the erection of a burning-house, they had been unable to render, in a fit marketable state, the produce from the Rix Hill Mine, and that, in consequence, a debt, amounting to 2187*l.* 14s. 3d. had accumulated; they also expressed their expectations, from the tenor of the reports, of realising early profits, from the stated productiveness of the lodes. Having concluded an arrangement for the erection of a burning-house, this building was expeditiously completed, and the burning of tinstuff commenced on the 21st March, from which time the committee were able to test the accuracy of the agent's statements. It will be remembered that, at the last meeting, the quantity on surface was then calculated equal to 20 tons of black tin. On the 17th March the quantity was reported to have accumulated to 49½ tons; whilst the produce to the end of June should have added 30 tons—say in all about 80 tons—the value of which was estimated at about 3200*l.* The first sampling took place on the 17th April of 10 tons 1 cwt. 2 qrs. 14 lbs., realising 441*l.* 0s. 1d.; the second sampling, on the 1st May, of 8 tons 10 cwts. 2 qrs. 20 lbs., realising 335*l.* 9s. 10d.; thus, within six weeks, 18 tons 12 cwts. 1 qr. 6 lbs. of black tin were sold, realising the sum of 776*l.* 9s. 11d. With this the committee had no reason to feel disappointed, but the delay and falling off in the following sale, as well as the suddenly increased cost which was incurred in the month of May, caused them considerable anxiety, and they instantly called in other agents to inspect the property. The reports of these agents convinced the committee that the most gross deception had been practised, and the course they immediately took was to place the management in other hands. The committee felt much regret in having to communicate to the shareholders so unsatisfactory and unexpected a change in the prospects of the adventure. They are, however, at the present time, glad to state that the prompt measures which were adopted have been the means of saving the shareholders from being plunged into an enormous debt, which continued operations would speedily have inflicted, and probably would have so crippled the concern, that its abandonment would have been the result. With this explanation regarding past disappointment, the committee have now some consolation and satisfaction in referring to the proceedings, under the new management, since June. Keeping in view the liabilities which had to be met by calls upon the shareholders, it was determined to reduce the expenditure to the lowest possible limit—to confine the operations to sinking the middle shaft below the 17 to the 28 fm. level—and to break such tin ground as could be returned profitably during that period, it being considered sufficient might be raised in sinking, and from the back of the 17 fm. level, to meet the expenses. The reason for prosecuting the middle instead of the engine-shaft was to prove, as speedily as possible, and with little cost, whether the tin ground was likely to continue in depth, the former shaft being conveniently situated for that purpose. The 28 fm. level was reached the end of Nov., and from June to that time the costs have been nearly met by the returns. The lode in the last 4 fms. sinking has considerably improved, both in character and productiveness, and, during the present month, the returns are expected to leave a small profit, whilst present appearances afford reasonable expectation of future prosperity.

The agent's report is as follows:—

East Crowndale Mine, Dec. 29.—The 28 fathom level is extended east of the middle shaft about 10 fms.; in the present end is a lode about 4 ft. wide, let at 40s. per fm., and 4s. in 1*l.* for driving; we have also set the ground in the back of this level at 5s. in 1*l.*; this level west is extended about 9 fms.; the lode in the present end is much improved; this end is also set at 35s. per fm., and 4s. in 1*l.* for driving; in the back of this end we have also set a tribute pitch, at 6s. 8d. in 1*l.* We have also let the pitches in the back of the 17, one at 7s. 6d., and the other at 9s. in 1*l.*, the tributers to pay all costs of dressing, &c.; we have also a pitch in the back of the 17 working at 9s. 4d. in 1*l.*, the owners paying for dressing cost. The number of men employed on tutwork is 12, and on tribute 11. From the appearance of the ground driven through in the 28, there can be no doubt but that we must see the lode at a greater depth; and by the end of the ensuing month we shall be in a position to advise which of the shafts to sink. We consider, on the whole, that the prospects are cheering, and with a continuance of the same quality of ground, we anticipate making profits. If the severity of the weather does not impede our dressing, we shall be able to return the quantity promised (8 tons).

Two vacancies in the committee have occurred since the last meeting—one by the death of their respected colleague, Mr. George Lewis Hollingsworth, and the other by the disqualification of Mr. George Thomas. It is not intended to fill up these vacancies. The committee have only to add, that the present state of the mine and the finances encourage them to hope that, before the next annual general meeting, the balance in favour of the shareholders will be sufficiently increased to admit of a division of profits.

Statement of Accounts for the year ending 30*th November*, 1849.

1848—Nov. 30.—Balance this day			£2187	14	3
1849—Nov. 30.—Twelve months' expenditure			4628	0	0
Balance			101	10	2
Total			£6917	4	5
1849—Nov. 30—Calls made			£5020	0	0
Tin sales—44 tons 19 cwts. 0 qr. 26 lbs.			1852	10	7
Copper ore sold—26 tons 17 cwts. 1 qr.			44	13	10
Total			£6917	4	5

The CHAIRMAN, after taking a review of the past and present state of the mine, and the encouraging prospects it held out, moved the adoption of the report and accounts, which were carried unanimously.

G. B. Carr, Esq., and Thomas Harrison, Esq., who retired by rotation from the committee, were unanimously re-elected; and a vote of thanks was then passed to the chairman, to the committee and auditors, and the meeting separated.

THE MINING COMPANY OF IRELAND.

The following report of the board of directors, was read at a half-yearly meeting of proprietors, held at the offices, Dublin, on Thursday last:—

Your board presents to you the following report of the progress made in the company's affairs in the past half-year. Having, in the report for the previous half-year, stated in detail the various circumstances which, combined, deprived the company of profit, and consequently of dividends, and having at the same time set forth the works in progress, with the view of overcoming some of those unfavourable circumstances, it is not considered necessary to advert further to the subject on the present occasion, than to state that considerable progress has been made towards completion of these works, and that the company's prospects are improved and improving.

THE SLIEVARDAGH COLLIERIES (County Tipperary).—There has been some increase in the demand for culm (small coal), and of profit from the works, but not to the extent contemplated; farmers having sustained a further check by disappointment in crops and prices, which discouraged the application for lime as manure, heretofore a source of extensive demand for culm.

THE KNOCKMAHON COPPER MINES (County Waterford).—In pursuance of the agreement for new lease of the principal section of the Knockmahon Mines, those works at the bottom of the mine at various points, which had been for some time suspended, were resumed, and have been continued throughout the period of the present account, occasioning expenditure above the value of the ores obtained, amounting to 213*l.* 17s. 3d., as stated in the accounts presented herewith. The long continued unproductiveness of another section of these mines held under the Ecclesiastical Commissioners, where the engine-shaft had been sunk 200 fms., and levels driven under the ocean 160 fms., induced your board to suspend the deep workings therein, until apprised of the result of a memorial to the Commissioners, soliciting that, agreeably to the custom in Cornwall under si-

milar circumstances, they may be pleased to forego payment of rent, until the produce obtainable shall yield profit to the company, or for such period as the Commissioners shall think equitable. Awaiting the reply of the Commissioners, your board has only to state as regards these mines, that an improved price for copper within the past and present month, affords expectation of more satisfactory returns from henceforth. Indications of a copper mine having been discovered on the lands of Kilmurren, near Knockmahon Mines, an agreement has been signed for a lease, and some progress made in sinking the shaft, with a view of proving the ground. A similar agreement has been entered into for the minerals within the lands of Seafield, Scarrawalsh, and Corrigcastle, also in the vicinity of the Knockmahon Mines. The rent in each case is to be one-twentieth of the produce, the altered state of the law admitting of those terms.

LISNACON COLLIERY (County Cork).—The tunnel, or level, in progress, for unwatering Lisnacon Colliery, has not been completed, an unusually hard rock having been met with which impeded the works; and the shallow workings in coal, announced in a previous report, having become unprofitable, have been suspended, and the works confined to driving the tunnel towards completion.

LUGANURE LEAD MINES (County Wicklow).—The depressed state of the lead market, noticed in last report, has continued throughout the period of the present account, and the workings not having yielded increased produce, the company has been again deprived of profit from Luganure Mines and smelting-works at Ballycorus. There is some appearance of increase in the price of lead, which, if realised, will materially improve the company's prospects in this district, where the large extent of ground opened will admit of considerable increase to the workings when prices shall become remunerative. As regards the company's mortgage of Lord Audley's estate, a conditional order for sale of the estate has been made upon petition to the commissioners for sale of incumbered estates in Ireland; and although your board and trustees are not parties to the petition, they will afford all possible aid in furtherance of the proposed sale, and the consequent liquidation of the company's claim, now amounting to 14,282*l.* 19s. 11d.

This sum, together with other debts, bills, cash, and mining materials, not in use, amounting to 14,186*l.* 3s. 2d., the stock of mineral produce at present value 20,989*l.* 5s 1d., with the mines, machinery, mill sites, and farms, at cost 110,463*l.* 14s. 8d., amounting in all to 159,922*l.* 2s. 10d., form the present assets of the company, and your liabilities amount to 17,370*l.* 2s. 2d. Your board, disappointed by the long continued unproductiveness of the company's operations, attributable to causes affecting, more or less, every interest in the empire connected with the employment of labour, deemed it to be desirable that additional professional advice should be obtained, and your mines have been recently inspected by experienced mine agents from Cornwall, under whose advice the works then in progress have been continued, in the confident expectation of a return to the former scale of prosperity; and, in the meantime, your board's fees, and all salaries payable by the company exceeding 40*l.* per annum, have been reduced from 20 to 25 per cent., and all practicable economy in other respects has been adopted, with the view of hastening a return to the prosperous state of the company's affairs, which admitted of such large dividends heretofore.

We shall give a report of the proceedings in our next Journal.

BALLESWIDDEN.—The usual two-monthly account for Sept. and Oct. was held at the mine on the 31st Dec., when it appeared that there was a balance in favour of adventurers of 804*l.* 18s. 8d. It was resolved that a dividend of 9s. per share be made, being 730*l.* 16s.—leaving 74*l.* 2s. 8d. to the credit of the adventurers. It also appeared that the profit and loss account in the purser's hands is 1320*l.* The agent's report of the mine was most satisfactory, the western part of the mine having much improved, and the whole holding out cheering prospects for the adventurers.

NORTH POOL.—At the usual two-monthly meeting of adventurers, held at the mine, on Tuesday last, the accounts for September and October were passed, and a dividend of 22*l.* 10s. per share was declared:—By balance from last account, 504*l.* 9s.; ores sold (less dues), 4109*l.* 10s. 2d. = 4613*l.* 19s. 2d.—To costs and merchants' bills, 1733*l.* 8s. 1d.; dividend of 22*l.* 10s. per share, 2250*l.* = 3983*l.* 8s. 1d.: balance in favour of adventurers, 630*l.* 11s. 1d.

PLYMOUTH WHEAL YEOLAND.—At the general meeting held on the 28th Dec., the report was satisfactory, and the vigorous prosecution of the works was unanimously decided on, and a resolution passed forfeiting many of the shares in which certain calls were in arrear, but by a subsequent resolution, any party paying his calls before the 31st Dec., was to have his shares restored, which, judging from the last sale of tin, 4½ tons at 42*l.* 10s., will, doubtless, be taken advantage of by most of the delinquents.

SPEARNE CONSOLS.—At a meeting of adventurers held at Balleswidden on the 31st December, the accounts were examined and passed for the two months ending October, when there appeared to be a balance in favour of adventurers of 419*l.*; whereupon it was resolved to make an immediate dividend to the shareholders of 1*l.* 15s. per share, making 224*l.*—leaving balance to be carried to next account, of 195*l.* This makes the 14th dividend in four years, yielding an average return of about 80 per cent. per annum to the original shareholders on their outlay.

TREGORDEN.—A general meeting of shareholders was held at Liskeard, on the 19th Dec., when the statement of accounts for September and October were presented, showing a balance of 269*l.* 5s. against the mine. A call of 1*l.* per share was made. The 20 fm. level having been brought under Wilcock's shaft and holed, and the prospects in both improved, it was resolved to erect a sufficiently powerful engine, and Wheal Sister's engine, a 36 in. cylinder, having been offered for 425*l.*, paying 50*l.* immediately, and the remainder by an acceptance, at six months date from the next general meeting, it was unanimously agreed to engage the said engine on the terms named, and the purser was authorised to carry the same into effect.

MINING IN FLINTSHIRE.—Great excitement and considerable activity at present prevails in the neighbourhood of Holywell, in consequence of the discovery of several rich veins of lead ore on the properties of the Hon. Mr. Mostyn and Viscount Fielding. Leases have been proposed to be taken at heavy rates by the tenants; but until the property is further developed, the lords have declined to enter into conclusive arrangements.

ALTEN MINES.—Dispatches up to the 27th Nov. have been received at the office. In consequence of the lateness of the month, when the post started the report and settings for the ensuing month could not be forwarded. The general tenor of the letters received were satisfactory, and a progressive improvement had taken place in the mines.

ASTURIAN MINING COMPANY.—This company at present are proceeding at a reduced expenditure of 300*l.* per month. The works have been stopped since the 8th December, the English workmen having struck, and refused to re-engage until a different organisation takes place. The formation of the new company proceeds but slowly, and it is to be deplored that the shareholders are dilatory in paying up the call made by the liquidators. In the present favourable appearance of the metal trade, it is deeply to be regretted that a property so valuable as that of the Asturian Mining Company should, from untoward circumstances, be lying fallow.

COMPANY OF COPPER MINERS IN ENGLAND.—A meeting of this company will be held on the 9th inst., to elect an assistant and for the despatch of business. Since our last notice, several dissentients have given in their adhesion to the proposals of the committee of adjudication, and there is every probability, at the next meeting, that terms will be proposed which will induce all parties to come forward and assist in the general resuscitation of this ancient and honourable company.

CERRO DEL BOTE MINING COMPANY.—The formation of this company proceeds satisfactorily, but slowly; about 20,000*l.* has been subscribed, and the proprietors are in hopes that in a short period the whole amount will be made up. Had they offered more favourable conditions to the public, there is no doubt the list would have long since been filled up.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

COMBLAWN MINE.—The committee have finally purchased the Wheal Martha engine from Mr. West, of St. Blazey, for 650*l.*, payable in cash; and Messrs. Hocking and Loam, of Redruth, have been appointed to remove and superintend its re-erection on Comblawn. Is is estimated that the buildings will require two months for completion, and a similar period to fix the engine and commence working. A call of 1*l.* per share was made on the adventurers, payable on the 17th inst., at the meeting of the finance committee, held yesterday.

EAST CROWNDALE.—The lode in the 28 fm. level has improved, the miners having got out of the elvan which disordered the 17 fm. level; it still continues productive. The softness of the ground, and the compact character of the lode, should induce the committee, in the present favourable position of the tin market, to prosecute the workings with redoubled energy. The prospects of the mines, on the whole, are improving, while the expenditure is considerably lessened. The average price of the ground set to the tributers, last month was no more than 5s. 6d. in 1*l.*

POLBERRO MINES.—The following are particulars of the returns from these mines during the past year:—

Black tin	.....	*Tons* 381	3	3 25	.....	£16,004	18	5
Copper ore	.....	33	6	0 0	.....	396	2	0

SPEARNE CONSOLS MINES are now looking very well; we have a good course of tin in the engine-shaft sinking under the 116 fm. level, and a good lode of tin in the 116 fm. level east and west from the engine-shaft; we have also a good branch of tin in the 100 and 90 fm. levels, west from the engine; and there is a good branch of tin in the 60 and 40 fm. levels, east from the engine-shaft. Our tributers are raising a good quantity of rich tinstuff; and we are convinced, if the price of tin keeps up, you will do well.

FIRE AT WHEAL SQUIRE.—On Thursday last, at Wheal Squire, in the parish of St. Erth, the changing-house was entirely burnt down, and all the wearing apparel of the men who were underground at the time was destroyed. About 8 lbs. of gunpowder, which was in a chest, exploded. The cause of the fire has not been discovered.

John Ralph, a pitman, aged 19 years, was on Friday, the 21st December, by some accident, thrown out of a cage in Hebburn pit, and killed.

Bilston.—On Thursday, Mr. Richard Malpas, butty of a coal-pit in Riley's Field, was killed by being drawn up over the pulley-wheel at the mouth of the shaft.

Wendron, Cornwall.—On Tuesday last, a young man was at work in the 110 fm. level, in Trumpet Consols Mines, when suddenly he missed his footing and fell into the 120 fm. level, where a tram-waggon which was passing at the time went over him, lacerting his face and head very much. Mr. T. H. Roskruge, the mine surgeon, was soon on the spot, and we hear he is likely to recover.

RAILWAYS OPENED IN THE YEAR 1849.

It appears that the aggregate length of English railways opened for traffic in the year 1849 was 760 miles; of Scotch railways, 73½ miles; and of Irish railways, 114 miles—making the aggregate length of railways opened in the United Kingdom, during the past year, 937 miles, being 270 miles less in extent than those opened during the year 1848. The English lines were—the Chester and Holyhead, Mold branch, 13¼ miles; the East Anglian, 24 miles; East Lancashire, 45 miles; Eastern Counties and Norfolk, 15 miles; Eastern Union, including the Stour Valley line, 43 miles; Furness, 17½ miles; Great Northern, 33 miles; Great Western extension, 30 miles; Lancashire and Yorkshire branches, 12 miles; Leeds and Thirsk, 30 miles; London and Blackwall, 1¾ mile; London and North-Western (Huddersfield and Manchester, and Leeds and Dewsbury), 44 miles; London and South-Western branches, 22¾ miles; Manchester, Buxton, Matlock, and Midland, 12 miles; Manchester, Sheffield, and Lincolnshire branches and extensions, 97 miles; Midland extension, 16 miles; Newcastle and Carlisle branch, 4 miles; North Staffordshire, 51¼ miles; North-Western, 37 miles; Reading, Guildford, and Reigate, 45 miles; Shrewsbury and Birmingham, 30 miles; Shropshire Union, 30 miles; South Devon, 2½ miles; South-Eastern (North Kent), 25¾ miles; South Staffordshire, 17¾ miles; South Yorkshire, 9 miles; Whitehaven and Furness, 16½ miles; and the York, Newcastle, and Berwick branch, 21¼ miles. The Scotch lines were—the Aberdeen, 32 miles; Caledonian extensions, 18 miles; and North British branches, 23½ miles. The Irish lines were—the Cork, and Bandon, 9¾ miles; Dublin and Belfast Junction, 22 miles; Dundalk and Enniskillen, 18 miles; Great Soutern and Western extension to Cork, 58¾ miles; and the Newry, Warrenpoint, and Rostrevor, 6 miles.

RAILWAY TRAFFIC IN THE YEAR 1849.

It appears that the gross traffic receipts of railways in the United Kingdom, for the year 1849, amounted to 11,013,820*l.* on 5161 miles of railway, being an increase of 954,820*l.* in the receipts, over those of the preceding year, on 4326 miles, and also an increase of 835 miles of railway in operation. Independent of these railways, there are about 20 new lines in operation, of an aggregate length of 445 miles, the traffic returns on which are not published weekly, but may be estimated at 200,000*l.* for the past year.

In addition to these, there are 15 other lines, of an aggregate length of 344 miles, belonging to old railway companies, who do not publish their traffic returns; but it appears from the returns to the Railway Commissioners that the gross receipts on these lines are about 470,000*l.* per annum. These sums, added to the above, show that the gross traffic receipts on all the railways in the United Kingdom during the past year amounted to 11,683,800*l.*; and the aggregate length of railway open, and over which the traffic was carried, was 5950 miles, being at the rate of 1963*l.* per mile per annum.

The capital expended on railways, the traffic returns of which are published every week, amounted in July, 1842, to 52,380,000*l.*; in 1843, to 57,635,000*l.*; in 1844, to 63,480,000*l.*; in 1845, to 71,648,000*l.*; in 1846, to 83,165,000*l.*; in 1847, to 109,528,000*l.*; in 1848, to 148,200,000*l.*; and in July, 1849, to 181,000,000*l.* The gross traffic returns per cent. on the capital expended amounted, in 1842, to 8·29 per cent.; in 1843, to 8·42; in 1844, to 8·84; in 1845, to 9·30; in 1846, to 9·25; in 1847, to 8·20; in 1848, to 6·78; and in 1849, to 6·13 per cent.

The expenditure on the new and old lines, the traffic returns of which are not published weekly, amounts to about 16,000,000*l.*—that is, 9,000,000*l.* on the former, and 7,000,000*l.* on the latter, making, with the 181,000,000*l.*, a total of 197,000,000*l.* expended on 5950 miles of railway, being an average cost of 33,110*l.* per mile.

PUBLIC SALES.

JAN. 4.—By Messrs. SHUTTLEWORTH and SONS, at the Mart.—Contingent reversion to one-third part of 2000*l.* Three-and-a-Quarter per Cent. Reduced Bank Annuities, to which the purchaser will be entitled provided a gentleman should survive his mother, aged 80, with benefit of survivorship to the remaining two thirds, should one or both his brothers, aged 46 and 42, die before their mother—sold for 280*l.*

The absolute reversion to one moiety of 4896*l.* 3s. 3d., Three-and-a-Quarter per Cent. Reduced Bank Annuities, payable at death of a lady, aged 63—sold for 1160*l.*

A bond, by way of mortgage, for the capital sum of 3450*l.*, bearing interest at 5 per cent., originally granted by the Birmingham and Liverpol Junction Canal Company, now merged in the Shropshire Union Railway and Canal Company, and guaranteed by the London and North-Western Railway—knocked down for 3270*l.*

Absolute reversion to 500*l.* stock in the Globe Insurance Office, bearing 6 per cent. per annum interest, to which the purchaser will be entitled at the death of a gentleman aged 76, sold subject to 10*l.* per cent. legacy duty—sold for 390*l.*

RAILWAY SHARES.—At a sale at the Stock Exchange, on Thursday, the 3d inst., in the matter of Pritchard and Dale, bankrupts, 50 shares in the Reading, Guildford, and Reigate Railway Company, on which 7*l.* 10s. per share was paid, realised 8*l.* 5s.; six old shares in the London and South-Eastern Railway Company, 21*l.* each; 226 No. 1 shares in the same company, 19½*l.*; 288 No. 2 shares in the same company, 16*l.*; and 318 No. 3 shares, 18¾*l.*

THE LONDON RAILWAY CATTLE MARKET.

A new company, under the above title, has been provisionally registered within the last few days. The prospectus states the immediate objects they have in view, viz.:—

I. To obtain an order in council for the abolition of Smithfield-market.

II. To obtain a royal charter for the establishment of the following railway markets and abattoirs:—1. A south London cattle-market and abattoir in connection with the South-Eastern and South-Western railways, with a quay on the Thames at Deptford for the reception of foreign cattle. Such market to be situate on unoccupied grounds adjoining the Bricklayers' branch of the South-Eastern Railway.—2. A north-eastern cattle-market and abattoir, in connection with the Eastern Counties Railway, the North-Western, and the London and York Railway. Such market to be situate on unoccupied grounds near King's-cross.—3. A western market and abattoir, in connection with the Great Western Railway. Such market to be situate on unoccupied grounds at Paddington. The three markets to be held on Mondays, Tuesdays, and Wednesdays.

III. To obtain Parliamentary powers for enforcing the following regulations:—To levy tolls, according to a moderate and justly proportioned tariff, on the animals brought to the markets; and to let buildings for the manufacture of offal. To order the killing of animals sold in the market to be performed in the abattoirs; each butcher to have his place to himself under lock and key if he wishes it, and pay a rent, water and gas included; but should he choose to have the slaughtering and dressing performed by the company's servants, a small price to be charged; the blood, refuse, and manure, being in either case left for the company's use. To forbid the passage of cattle by public road, to any point within a distance of five miles from the railway market, except between the hours of one and five o'clock a.m. To prohibit the passage of animals of every description from one market to another by any of the London bridges, except between the hours of one and five o'clock a.m.

IV. To establish a system of electric telegraphic communication between the metropolitan meat markets, the larger meat and cattle markets of the provincial towns, and the London railway cattle markets. By this arrangement, the prices of meat, which, to a great degree, regulate the prices of sheep and cattle, will be published every hour in the stock markets. To accomplish this most desirable purpose, in a satisfactory manner, an electric telegraph office, acting as a branch of the central electric telegraph office, in Lothbury, will be placed in the centre of each of the new markets, and the intelligence communicated by them will be made public at the company's expense.

V. To associate with the markets and abattoirs three branch banks, in connection with the Royal British Bank. The great importance of this part of the undertaking appears from the fact, that at least 15,000,000*l.* of money annually changes hands in Smithfield Market, and the greater portion of it by cheque. The system of business to be pursued in these establishments will be on the "Scottish principle," which is known to combine safety with the greatest amount of convenience to small customers—a point of great importance to the majority of graziers and butchers. The business connected with these markets must be very great, and the advantage to the company, even at the lowest rates of gain, correspondingly large.

The numbers of the cattle during the year 1846, were 213,525, and of sheep, 1,527,200, on which the tollage was 7474*l.* 1s. 2d.; which sum, it is to be remarked, is the only one realised by the City in the retention of the great nuisance of Smithfield-market; but, it would be in the management of the abattoirs, the greatest amount of commercial advantage would be gained. The Liverpool abattoir, the first of its kind established in this country, pays 20 per cent., and those on the continent, a proportionally large rate of interest. The metropolitan railway abattoirs, it is calculated, will yield even a larger profit. It is, however, on public grounds the promoters would, in this age of sanitary improvement, mainly ground their appeal to the public, for they are certain their plans will provide for all, and ultimately benefit everybody.

New Patents.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

Louis Cesaires Charpillon, of Rue de Luxembourg, France, for improvements in locks for guns and pistols.

J. Read, of Park-terrace, King's-road, Chelsea, gentleman, for improvements in machinery for extracting fluids from animal, vegetable, and mineral substances, and in compressing the same.

W. Palmer, of Sutton-street, Clerkenwell, Middlesex, manufacturer, for improvements in the manufacture of candles, lamps, and wicks.

W. Barlow, of Blackheath, civil engineer, and W. H. Barlow, of Derby, civil engineer, for improvements in the permanent ways of railways.

A. B. Cochrane, jun., and A. Slate, of Dudley, Worcester, engineer, for improvements in the manufacture of iron pipes or tubes.

T. Lightfoot, of Broad Oak, within Accrington, Lancaster, chemist, for improvements in printing and dyeing fabrics of cotton and of other fibrous materials.

W. Buckwell, of the Artificial Granite Works, Battersea, civil engineer, for improvements in compressing or solidifying fuel—To extend to the colonies only.

J. Sidebottom, of Pendlebury, Lancaster, manager, for improvements in steam-engines.

H. Dorning, of Hearsley, near Bolton, Lancaster, brick and tile manufacturer, for certain improvements in machinery or apparatus for manufacturing bricks, tiles, and other similar articles from clay or other plastic materials.

Albert Crackell Waterlow, of London-wall, lithographer, for improvements in the means and apparatus for obtaining copies of writings, drawings, and other designs. (Being a communication.)

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

Bathgate and Wilson, Canning Foundry, Liverpool, metallic cask or vessel.

J. Meik and H. Watson, Sunderland, signal-house.

W. Richards, Birmingham, corkscrew.

A. Smith, Osborne-street, Whitechapel, universal painters' brush.

W. Gordon, Army and Navy Club, St. James's-square, London, Lieutenant R.N., a pair of marine steam-engines.

John Lart and Son, Wood-street, Cheapside, elastic back piece for cotton and other drawers.—*Mechanics' Magazine.*

LATEST CURRENT PRICES OF METALS.

LONDON, JANUARY 4, 1850.

ENGLISH IRON. *a*	*per ton.*		
Bar, bolt, & square, London	£6	0	0
Nail rods	6	10	–6 15
Hoops	7	15	0
Sheets (singles)	8	10	–8 15
Bars, at Cardiff & Newport	5	0	–5 5
Refined metal, Wales*	3	5	–3 15
Do. anthracite*	3	15	0
Pigs in Wales	3	5	–3 10
Do. do. forge	2	15	–3 5
Do., No. 1, Clyde ... *net cash*	2	8	–2 9
Blewitt's Patent Refined Iron for bars, rails, &c., free on board at Newport*	3	15	0
Do., do., for tin-plates, boiler plates, &c., ditto	4	10	0
Stirling's Patent Toughened Pigs } in Glasgow	2	15	–2 18
Stirling's Patent Toughened Pigs } in Wales	3	10	–3 15
Staffordshire bars, at the works	6	0	–7 10
Pigs, in Staffordshire	3	5	0
Rails	5	5	–5 10
Chairs	4	0	0
FOREIGN IRON. *b*			
Swedish	11	0	–11 10
CCND		—	
PSI		—	
Gourieff		—	
Archangel		—	
FOREIGN STEEL. *c*			
Swedish keg	14	15	–15 0
Ditto faggot	15	0	–15 15
ENGLISH COPPER. *d*			
Sheets, sheathing, & bolts, *p. lb.*	0	0	9½
Tough cake *per ton*	84	0	0
Tile	£83	0	0
Old copper *e* *per lb.*	8½*d*		
Yellow Metal Sheathing	9*d*		
FOREIGN COPPER. *f*			
Russian		—	
ENGLISH LEAD. *g*			
Pig *per ton*	16	5	–16 10
Sheet	17	10	–17 15
Red lead	18	0	0
White ditto	23	0	0
Patent shot	19	0	0
FOREIGN LEAD. *h*			
Spanish, in bond	15	0	–15 10
American ditto		—	
ENGLISH TIN. *i*			
Block *per cwt.*	4	0	0
Bar	4	1	6
Refined	4	4	–4 7
FOREIGN TIN *k*			
Banca, in bond	3	18	–4 0
Straits	3	16	–3 17
Peruvian (6 mo 2½ p. ct. dis.)		—	
TIN-PLATES. *l*			
IC Coke *per box*	1	8	–1 8 6
IC Charcoal	1	11	–1 12 6
IX ditto	1	17	0
SPELTER. *m*			
Plates, warehoused *per ton*	16	0	–16 10
Ditto, to arrive		—	
ZINC. *n*			
English sheet *per ton*	20	0	–21
QUICKSILVER *o* *per lb.*	3*s.*	4*d.*	3*s.* 6*d.*

Terms.—*a*, 6 months, or 2½ per cent. dis.; *b*, ditto; *c*, ditto; *d*, 6 months, or 3 per ct. dis; *e*, 6 months, or 2½ per cent. dis. *f*, ditto; *g*, ditto; *h*, ditto; *i*, ditto; *k*, net cash; *l*, 6 months, or 3 p. ct. dis.; *m*, net cash; *n*, 3 months, or 1½ p. c. dis.; *o*, ditto, 1½ dis.

* Cold-blast, free on board in Wales.

The fluctuations which have taken place in the metal markets, during the year 1849, have been very slight in comparison with former years.

WELSH BAR-IRON, in January last, was held at 5*l.* 5s. per ton, free on board at the port. Between this time and the middle of March prices gradually improved; and, under the influence of favourable reports from the continent, and the easy state of the money market, reached 6*l.* per ton. In April, the recommencement of hostilities in the north of Europe, and the Danish blockade of the Baltic ports, together with other unfavourable political appearances at the moment, caused a reaction, and the price receded between that date and the middle of November following to 4*l.* 12s. 6d. to 4*l.* 15s. This depression was, however, of short duration, for the lowness of the price attracted the attention of merchants, shippers, and speculators; and, early in December, it again reached 5*l.* 5s., at which quotation we write the market firm to-day, with every prospect of higher rates being established.

The Staffordshire ironmasters, influenced by the same causes, advanced their prices of manufactured iron in February last 20s. per ton; but, early in July, made a reduction of 10s. per ton, the present quotation being 7*l.* 10s.

SCOTCH PIG-IRON.—In our remarks on the 5th January, 1849, we gave the estimated stock at Glasgow (on the 30th December, 1848) at 98,600 tons; and the quotations for mixed Nos., of good brands, 46s. 6d. per ton.

During the past year, the production has increased by the make of twelve additional furnaces; and the estimated stock at Glasgow has now reached 195,000 tons: showing an increase on the year of 96,400 tons; whilst the price has advanced to 48s. for mixed Nos.

There is, at the moment, rather more inquiry for this article; but, with these facts before us, it is difficult to suppose that any considerable advance will take place.

It may be deemed a fortunate circumstance for the iron trade that, whilst the stock of pig-iron in Scotland has so rapidly increased, there has been a reduction in both Wales and Staffordshire; in which districts, from the best information we can gather on the subject, the stocks are lighter than ever were known.

ENGLISH TIN.—An advance of 7s. per cwt. has taken place in this article during the week. Foreign tin has also advanced; we quote Banca 79s. to 80s., and Straits, 78s.

TIN-PLATES continue in good demand; and the stock in London being very small, it is probable that higher prices will have to be submitted to.

SPELTER.—A considerable speculative business has taken place in this article, and the price has, in consequence, advanced within the last fort ight 1*l.* per ton.

The present stock in London is 4000 tons.—In other metals no alteration.

*** We shall give the several statistical details in our next Journal.

SCOTCH IRON TRADE.—A detailed and comprehensive report of the state of the iron trade in Scotland will be found in the last page.

LIVERPOOL, JAN. 4.—We have little or no change to report in our market this week. The buoyant feeling continues, and a good inquiry has been experienced for all descriptions of manufactured iron, with prices gradually inclining upwards. We have no change to report in tin, copper, or lead.

MANCHESTER.—Our iron market continues very firm, and though the result of the stock-taking in Glasgow shows a large excess over that carried forward from last year—being, as we understand, about 195,000 against 98,000 tons—it is at the same time less than was generally anticipated, and it has not, therefore, affected prices in the least. The holders, both here and in Glasgow, are very firm, and iron is not purchasable in quantity below the highest quotations of last week, an I there is a general impression amongst the trade that, though there may be occasional checks, prices will eventually rule considerably higher than for several months past. In manufactured iron there is a steady business doing, but dealers are not anxious to make large sales at current rates, and any orders of magnitude would be difficult to execute, except at an advance in price.

GLASGOW, JAN. 3.—There has been a fair amount of business doing this week in pig-iron. There is a very general feeling that the price will further advance; hence there is a considerable disposition shown to buy for forward delivery. The cash price of mixed Nos. may be quoted to day at 48s. 6d.

BOMBAY, DEC. 1.—A small quantity of copper from the Burra Burra Mines has been sold at 51½ rupees per cwt.—about 96*l.* per ton, according to present rate of exchange.—Iron: British and Swedish bar are firm, and in demand.—Hoop and Sheet are dull, while nail rod is in moderate demand.—Spelter and Pig-Lead have receded in value.—Swedish Steel is little inquired for.

CALCUTTA, Nov. 24.—This market, upon the whole, shows a decided tendency to improve; prices generally appear to have seen their lowest point, and a re-action begins to show itself.—Copper has advanced about 6 to 8 annas per md., and a more extensive business has been doing.—Sheathing has been placed 935 mds. at company's rupees, 36-12 to 37-4 per fy. md.—Brazier: 1180 mds., at 36 to 36-4 per fy. md.—Spelter has been inactive, but the tendency of the market is upwards. Offers have been making above our last quotations, but they have resulted in no sales, as holders are firm.—Iron: Holders have been very firm of late, and this has led to an advance in sheet and hoop. Flat, bar, and bolt have improved in demand, but as yet no advance in value is observable. The tendency of the market generally is upwards.

RAILWAY TRAFFIC RETURNS.

Names of Railways.	*Length.* 1850	1849	Present actual cost.	Price p. share	Div. 1849	*Traffic Returns.* 1850	1849
Aberdeen	57	16	1,000,547	11½	—	£ 674	£366
Belfast and Ballymena	37½	37½	514,968	18½	5*	429	391
Birkenhead, Lancashire, & Chesh.	19	15	1,088,804	37	5†	920	784
Bolton, Blackburn, & West Yorksh.	14	—	786,384	5½	—	390	276
Bristol and Exeter	85½	75½	2,660,490	58	—	3134	—
Caledonian	160	141	5,149.320	10⅝	3	5996	3501
Chester and Holyhead	94½	59½	3,358,217	9⅝ ⅜	4	1196	1084
Dublin and Drogheda	35½	35½	778,565	27	—	749	710
Dublin and Kingstown	7½	7½	395,915	—	—	807	785
Dundee, Perth, & Aberdeen Junc.	47½	47½	544,554	13½	6½	909	914
East Anglian (Lynn to Ely)	91½	55½	1,247,446	1½	—	650	737
East Lancashire	75½	24	2,528,519	11⅝ ⅝	5	2373	1643
Eastern Counties and Norfolk	322	295	12,027,069	6⅝ 7⅛	—	15477	14350
Eastern Union	78	50½	1,782,703	13	—	1875	1182
Edinburgh and Glasgow	57½	52½	2,923,199	28	6	2868	3189
Edinburgh and Northern	78	34	2,241,276	10½	2	—	1777
Glasgow, Paisley, and Ayr	102½	74	2,574,330	47	3	2706	2411
Glasgow, Paisley, & Greenock	23	23	852,846	12½	2	858	876
Gt. Northern & East Lincolnshire	143	—	5,138,756	7⅝ 7⅞	5†	2966	—
Gt. Southern & Western, Ireland	188½	110½	3,552,589	30½ 31	6†	3238	2919
Great Western	230½	206½	11,867,042	57½ 8	6½	12957	—
Lancaster and Carlisle	90	70	1,476,102	49	4½	3309	2007
Lancashire and Yorkshire	220	127½	10,063,862	57	5½	10173	10407
Liverpool, Crosby, & Southport	13	—	84,455	4½	—	68	66
London and North Western	478	428	26,251,635	110½	7	37183	34554
London and Blackwall	5½	4	1,299,675	3½ ⅜	1-12	547	567
London, Brighton, & South Coast	170	162½	6,502,600	78⅜ 78½	2½	6870	6897
London and South-Western	221	194	7,874,259	60½ 60⅜	5½	8561	8142
Londonderry and Enniskillen	14½	14½	185,739	16	—	99	—
Manchester, Sheffield, & Lincolnsh.	157½	94½	6,498,260	12½	5	4726	2892
Midland Company	183	423½	15,133,779	44½ 42½	5½	53921	22664
Midland Great Western (Irish)	50	36½	725,332	25	4†	943	801
Monklands	36	—	486,245	—	6	—	—
North British	122	83	3,649,055	10⅜	4½	3129	2399
Scottish Central	45½	—	1,364,228	14	7	1150	890
Shrewsbury and Chester	48	23	969,618	13	5	1693	1650
Shropshire Union	30	—	—	3⅜ 2⅜	—	429	—
South Devon	57½	29	1,909,232	5½	5	1506	1450
South-Eastern	189½	165½	8,666,007	18⅜ 19½	5½	8454	7603
Taff Vale	38	40	879,110	—	7½	1546	1390
Ulster	36	36	723,829	45⅝	—	—	653
Waterford and Limerick	25	—	512,894	—	—	—	—
West Cornwall	13	—	—	—	—	276	285
Whitehaven Junction	12	12	150,879	9⅜	3	224	170
York, Newcastle, & Berwick	290½	242½	6,827,849	16⅞ ⅞	7	11241	13112
York and North Midland	269	134	4,983,618	18⅜ 17⅛	7	5843	7298

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning Eleven o'clock.

Bank Stock, 7 per Cent., 203½ 4½
3 per Cent. Reduced Ann., 97 ⅞ 7 ⅛
3 per Cent. Consols Ann., —
3½ per Cent. Ann., 98¼ ⅛ ⅛
Long Annuities, 8⅞
India Stock, 10½ per Cent., —
3 per Cent. Consols for Opg. 97 6⅛ 7
Exchequ. Bills, 1000*l.*, 1¼d. 59 62 pm.

Belgian, 4½ per Cent., 89 89½
Dutch, 2½ per Cent., 55½ ⅝
Brazilian, 5 per Cent., 88
Chilian, 6 per Cent., —
Mexican 5 per Cent., ex Coup., 29⅝ ½
Russian, 5 per Cent., 110½
Spanish, 5 per Cent., 19½ ½
Ditto 3 per Cent., 37⅜

MINES.—The mining share market continues active, and a large amount of business has been transacted during the week. The probability of a progressive improvement with the new year is fully anticipated from the general inquiries now making for shares sold for investment.

Heigneton Downs Consols is reported to be in an improving position; some very rich stones of copper have been taken from the 35 fathom level, weighing upwards of 140 lbs in a stone.

In Tincroft and Tamar Consols there has been some large transactions during the week; the former continues improving, and Tamar Consols is at present in a very gratifying position.

South and East Tamar reports are of a very satisfactory character; and the pitches, in the former especially, have been set at a low tribute, whilst the men are making good wages. A large number of shares have changed hands this week; and inquiries for them are rather above the supply at present prices. At East Tamar, 70 tons of silver-lead ores have been sold—the highest offer being 14*l.* 15s. 6d., being two months' raisings.

Cook's Kitchen continues to improve, and a demand for the shares exists.

Several Trelawny shares have changed hands this week.

A dividend of 22*l.* 10s. per share was declared at the meeting of North Pool.

At Balleswidden two-monthly account, a dividend of 9s. per share, amounting to 730*l.* 16s. was declared for September and October, leaving balance of 74*l.* 2s. 8d. to credit of adventurers, exclusive of balance left from the previous account. The mine is represented in a very prosperous position.

At Spearne Consols account for September and October, a dividend of 35s. per share for the two months was declared, leaving balance in hand of 195*l.* This appears to be the 14th dividend in four years, affording an average return of 80 per cent. per annum on the original outlay. The mine is reported to be highly productive and progressively improving.

In the "Progress of Mining during the Past Year," published in the Journal last week, the amount of dividends paid by Balleswidden is stated at 2760*l.*, and Spearne Consols at 650*l.* We have since been favoured with a statement by a large holder, who informs us, that "Balleswidden Mine has paid to the adventurers to the end of December, 2923*l.* 4s., and left in hands of purser, 1007*l.* 11s. 6d.: making a profit of 3930*l.* 15s. 6d. during the year. Spearne Consols paid to the adventurers, during the year, 1024*l.*, while the Journal says 656*l.*" We are thankful to our correspondent for this correction; and would feel obliged to any purser or agent who would furnish us with their periodical statement of accounts; and we are certain our esteemed friend, Mr. Watson, would feel equally so in participating, whereby his labours would be diminished, and a great obstacle overcome.

Our usual annual statistical returns of the state and prospects of the metal trade, inserted in other columns of this day's Journal, will be found of much interest. There is also a fact of importance to notice in connection with the metal trade, that of the first sale of copper from the Burra Burra Mines, South Australia, in the Indian market, which realised 51¼ rupees per cwt.—about 96*l.* per ton.

Shares in the following mines have changed hands since our last:—East Wheal Rose, Treviskey and Barrier, Devon Great Consols, Bedford United, Treleigh Consols, South Tamar, Heigneton Down, Wheal May, East Tamar, Cook's Kitchen, Wheal Trehane, Tincroft, Lamheroose, West Providence, Camborne Consols, East Buller, Tregorden, Trelawny, West Caradon, Mary Ann, Condurrow, South Frances, East Wheal Crofty, Herodsfoot, South Tolgus, West Wheal Jewel, and Devon and Courtenay Consols.

At Tregorden bi-monthly account, for September and October, a balance of 269*l.* 5s. was found against the company, and a call of 1*l.* per share was made. Arrangements were made for the purpose of erecting a 36-in. cylinder engine, the improved prospects of the mine fully warranting an efficient development.

At the Callington Mines' quarterly meeting, held on Wednesday last, the statement of accounts for the three months ending September showed a balance of 2222*l.* 2s. 7d. against the Callington Mines, and 1245*l.* 6s. 8d. against the Kelly Bray sett. The directors' and agent's reports are given in detail in another column, the latter holding out encouragement of improvements and increased returns, on the lode being intersected in the 125 fm. level, and the diagonal shaft being sunk to the same depth.

The East Crowndale Mining Company held their annual meeting on Monday last. The balance in favour of the mine amounts to 101*l.* 10s. 2d. The sales of ores during the year appear to be 1897*l.* 4s. 5d. The committee's report enters into a full explanation of their position last year, and furnishes a very satisfactory account of their present prospects, and economical system adopted for bringing the mine into a permanent and profitable state of working.

The half-yearly meeting of the Santiago Mining Company was held on Wednesday—a full account of the proceedings will be found in another column; as also the report presented at the meeting of the Mining Company of Ireland, held at the offices in Dublin, on Thursday last.

In foreign mines there has been an average amount of business done, especially in St. John del Rey and United Mexican shares; in the latter there has been a decline, whilst in the former an advance. National Brazilian, Copiapo, and Guadalcanal shares have also changed hands.

The Linares weekly report represents the operations as proceeding in a very satisfactory manner.

Dispatches have been received by the Imperial Brazilian Association to the 3d November. The gold returns have much improved upon last advices; the produce for 19 days is—Gongo, from 13th Oct. to 2d Nov., lbs. 9 5 6 0; Bananal, lbs. 8 3 7 0=17 8 13 0: total amount since 1st July, lbs. 69 1 16 0. The report, which is given in detail, will be found under Foreign Mines.

HULL, THURSDAY.—We have had some considerable change since our last in the share-market—prices having, after receding, advanced, in some instances, considerably, while now again the market is much less buoyant.

TIN TRADE.—We are gratified to be enabled to state that our anticipations, expressed some weeks since, of a rise in this important branch of industry, have been fully realised. Since our last report, a rise in the tin trade of 7s. per hundred has taken place, and common block tin is now fetching the sum of 80s. per hundred. The price of tin in Holland has risen, and holders of Straits tin are keeping it at higher rates; in fact, it is questionable whether it can be obtained at the present prices quoted.

THE NORTH BRITISH AUSTRALASIAN COMPANY.

IMPORTANT PROCEEDINGS.

The Supreme Court sat, at Auckland, on the 6th August, to hear motions, when the case "Whitaker and Heale *v.* the Queen" was brought on.—This was a proceeding in the nature of a writ of error to set aside a judgment of the court given in November, 1846, whereby a grant, made by Governor Fitzroy in the name of the Crown to the plaintiff, in 1845, was declared invalid, and was annulled as having been made contrary to the provisions of the Australian Land Sales Act, 5 and 6 Vic., c. 36. It appears that that act was repealed on the 28th August, 1846, by the 9th and 10th Vic., c. 104, which came into operation from the time of passing, though the fact was not known in the colony till some months after. The proceedings taken by the Crown against the plaintiffs were not commenced till the September following, some time after the repeal of the Act.

The late judgment in the case of the "Queen *v.* Taylor" (see *Mining Journal*, Dec. 8), clearly lays down the effect in law of the repeal of the Land Sales Act. It was, however, impossible for the plaintiffs to have taken advantage of that fact, as it was not known in the colony at the time their case was decided. They now, however, sought to have the judgment against them set aside, it being manifestly, though unavoidably wrong, on the ground of the proceedings being commenced after the repeal of the statute which was declared to invalidate their grant. The Attorney-General appeared, but declined to plead. A question, however, arose as to the power of the court to annul its own judgment; but, after hearing Mr. Whitaker on the part of the plaintiffs, his honour, the Chief Justice, decided that the court had such power, and directed the original judgment against the plaintiffs to be vacated and annulled.

THE NEEDLE TRADE.—There was never, we are informed, a better demand for the manufactures of Redditch needles and fish-hooks, than at present. There is full employment for all who choose to have it, and overwork if they are minded to take it.—*Worcester Chronicle.*

BRISTOL AND EXETER RAILWAY.—An interview between the directors of this company and a deputation appointed by a recent meeting of the shareholders, took place yesterday. Nine of the directors were present, and the proceedings lasted upwards of five hours, and a most searching examination took place into the matters mentioned in the shareholders' letter to the directors. The directors stated, that they had come to the determination to alter the tariff by disallowing, from May next, any rebate upon the carriage of goods. They had also determined to remove the stores and engineering department from Bridgewater to Bristol; they had arranged for a reduction of salaries in the engineering department. The directors' reply to a series of resolutions expressive of the opinions of the deputation as to certain points, is promised as early as possible, and that reply will indicate to the shareholders the course they propose to adopt.—*Railway Record.*

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1000	Abergwesdin	9	6
1024	Alfred Consols	8½	15 20
1024	AshburtonUnited Mines	8½	12
1624	Balleswidden	9	16
128	Balnoon Consols	42½	50
905	Barristown	5½	3 4
3650	Bawden	½	⅛ ⅛
6000	Bealbury	1	¼
4000	Bedford	2½ 4½	4⅝ 5
1280	Birch Tor & Vitifer	10½	6⅛ 7
2500	Black Craig	6	10
8000	Blaenavon	50	10
5000	Blisland Consols	1	—
5000	Bodmin Moor Consols	1	3
100	Botallack	182	30
120	Brewer	5	2½
256	Brimpts Tin	2½	2½
10000	British Iron, New, regis.	12	8
—	Ditto ditto, scrip	10	10
2400	Bryn-Arian	2	6 6½
1107	Budnick Consols	52½	10 12
1000	Callington	22	7 8
20000	Camborne Consols	7	7⅛ 10
000	Cameron's Steam Coal	7	1
256	Caradon Mines	22½	10
256	Caradon United	24	5 8
256	Caradon Wh. Hooper	21	4⅝
1000	Carn Brea	15	105
3050	Carthew Consols	1½	7
114	Charlestown	220	—
500	Comblawn	5½	4½
128	Comfort	45	75
2256	Condurrow	20	90
1360	Cook's Kitchen	14	5
1000	Coombe Valley Quarry	5	5
000	Copper Bottom	1½	6½
900	Court Grange	7	10
212	Craddock Moor	23½	5
128	Creeg Braws	120	30
500	Cubert Mine	12½	—
1000	Cwm Erfin	3½	2
000	Daren	2	2 3
100	Derwent	8½	5
516	Devon&CourtenayCon.	1	2½
024	Devon Great Consols	1	195
000	Dhurrode	2	5
182	Dolcoath	30	20-25
560	Drake Walls	5½	3
000	Durham County Coal	45	9
000	Dyngwm	10	10 12
012	East Alvenney	5½	6
500	East Birch Tor	3	3
024	East Buller	1	5
112	East Caradon	47	47
048	East Crowndale	7½	1½
128	East Pool	15	65
000	East Tamar Consols	⅛	1
258	East Tolgus	1½	4½ 5
94	East Wheal Crofty	125	65
128	East Wheal Rose	50	600 620
—	East of Scotland Iron Co.	5	1½
123	East Wheal Seton	14	10
280	Esgair Llee	2	2 4
248	Exmoor Wh. Eliza	6	6
494	Fowey Consols	40	45
1024	Freidd Llwydd Mines	1½	3½
4000	Gen. Mining Co. for Irel.	1½	1½
256	Gonamena	44½	16
128	Goonvrea	4	2
256	Grambler & St. Aubyn	80	10
96	Great Consols	1000	265 270
512	Gt. Wh. Rough Tor Con.	24½	18 20
6000	Growa Slate Company	5	5
256	Hawkmoor	12½	70
6000	Heigneton Down Con.	1⅛	1 1½
1500	Hennock Silver-Lead	5s6d	5
4500	Hennock Iron & Tin	21s	21s
512	Herodsfoot	16	10½ 12½
10000	Hibernian	12½	1⅝
4000	Holmbush	22	8
1024	Kingsett and Bedford	1½	3⅜ 4½
787	Kirkcudbrightshire	8½	3 3½
2048	Lamheroose Wh. Marin	10	2½
252	Lanarth Consols	—	3½
256	Leiant Consols	47	20 25
160	Levant	—	180
1000	Lewis	17	9½ 10
1000	Llwynmaiees	8½	13 15
3600	Llynvi Iron	50	50
253	Lostwithiel Consols	23	10
6000	Marke Valley	10	⅜ 1
5000	Mendip Hills	3½	3 3½
128	Metha	34	—
20000	Mining Co. of Ireland	7	5
256	New East Crowndale	3½	4½ 5
100	North Pool	45	520
140	North Roskear	5½	150
262	North Wh. Leisure	1½	2
10000	Northern Coal Co.	23	2
128	Par Consols	55½	650
1248	Pengelly Tin	1	1
8000	Pennant & Craigwen	2½	2
1024	Penzance Consols	22s 3d	4
512	Plymouth Wh. Yeoland	6½	6
200	Polsatih Consols	5½	4½
2500	Rhoswiddol&Bacheiddon	10	10
10000	Rhymney Iron	50	13
10000	Ditto New	7	6⅝
1000	Rosewall Hill	1	5
256	Rosewarva Mines	—	12
2048	Runnaford Coombe Tin	⅝	5

BRITISH MINES—*continued.*

Shares.	Company.	Paid.	Price.
9000	South Tamar	¼	2⅛ 2⅜
128	South Caradon	5	200
1100	South Dolcoath	5	¼ ½
256	Sth. Friendsh. Wh. Ann	30	28 30
256	South Molton	7	12 13
256	South Tolgus	16	105 110
256	South Trelawny	28½	5
2000	South Wales, Mining Co.	1	1
128	South Wheal Basset	20½	425
124	South Wh. Frances	160	310 315
256	South Wh. Josiah	2	3¼ 4
1000	South Wh. Maria	2½	1½
10000	Southern&Western, Irish	2½	4
280	Spearne Moor	30	40
94	St. Ives Consols	—	80
128	St. Michael Penkivel	5	10½
999	St. Minver Consols	1	6
1000	Stray Park	43	20 21
9600	Tamar Consols	3	7 8
10240	Tavistock Consols	½	⅜ ⅝
1024	Tavy Consols	6⅜	1½
6000	Tincroft	7	12 12½
58	Tokenbury	170	10
120	Tolcarne	8	12½
256	Tregorden	3½	5
256	Tremane	1¼	30 31
5000	Treleigh Consols	0	3¼ ⅜
2000	Trenance	3	—
96	Tresavean	10	95
120	Trethellan	5	15 17
120	Treviskey and Barrier	130	140 150
512	Trethevy Copper	1	1
1000	Tyllwyd	2	2½
200	United Mines	50	160
256	Wellington Mines	25	35
128	West Buller	10	400
256	West Caradon	20	95 100
512	West Fowey Consols	40	12
—	West Par Consols	2½	—
2500	West Polgooth	5	5
512	West Providence	9	15 16
200	West Seton	45	185 190
120	West Trethellan	5	5
512	West Wheal Frances	1⅜	3 5
256	West Wh. Friendship	9	8
3845	West Wheal Jewel	12	2½ 2¾ 3
256	West Wheal Tolgus	80	5
256	West Wheal Treasury	27½	12½
1024	Whiddon Mines	4½	2
5200	Wicklow Copper	5	10¼ 10⅜
107	Wheal Adams	130	150
1000	Wheal Agar	—	6
256	Wheal Albert	10	1
240	Wheal Anderton	28	15 20
128	Wheal Ann	—	50½
512	Wheal Anna Maria	7	4
120	Wheal Bal	5½	10
256	Wheal Benny	14½	2
1024	Wheal Bray	11½	10
2424	Wheal Calstock	9	20 25
182	Wheal Elizabeth	9	14
256	Wheal Fortescue	15	12 13
100	Wheal Friendly	70	66½
388	Wheal Franco	27	11 12
100	Wheal Henry	—	24
1024	Wheal Lawrence	2½	2½
112	Wheal Margaret	79	225 230
512	Wheal Mary Ann	5	32
5000	Wheal May	⅛	⅛ ⅜
360	Wheal Oak	25½	5
3000	Wheal Penhale	1½	6
210	Wheal Prospect	4	7
120	Wheal Reath	41	150
128	Wheal Rose	60	3
198	Wheal Seton	107	260
180	Wheal Sisters	35½	5
512	Wheal Sophia	5½	5
128	Wheal Spearne	10	60
128	Wheal St. Ann	30	35
550	Wheal Trescoll	10½	19 20
260	Wheal Trelawny	7⅜	78 80
256	Wh. Tremaine(St. Ervan)	9½	2½
1024	Wheal Tremayne	9⅝	11
267	Wheal Tryphena	140	30
1000	Wheal Vincent	2⅜	8
128	Wheal Vlow (Perranz.)	1½	1½
184	Wheal Vyvyan	—	60

FOREIGN MINES.

5000	Alten Mining Company	1½	2½ 2⅝
15000	Asturian Mining Co.	15	2½
20000	Australian	4	5
6000	Barossa Range	1⅜	1⅜ ⅜
3000	Bolanos	150	—
2000	Ditto Scrip	17	—
10000	Brazilian Imperial	23	3 4
12000	Cobre Copper Co.	40	29
10000	Copiapo Mining Co.	14	4 3½
20000	General Mining Ass'n.	20	10½
4000	Guadalcanal	5	1⅜ 1⅝
2000	Ditto Preferential	2½	2½ 2⅝
5000	Kinzigthal Mining Ass.	2	1½
5051	Mexican Company	59½	—
20000	Mexican & SouthAmer.	8	1 1⅛
5000	National Brazilian	30	3½
104000	N. Brit. Australasian	1	⅝
7000	Royal Santiago	10	5 5½
11000	St. John del Rey	15	11½ 12½
43174	United Mexican ...Av.	28½	4⅜ 4⅝
10,000	Worthing (S. A.)	2	2⅛

*** *We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.*

FLUCTUATIONS IN THE STOCK AND SHARE MARKET,

DURING THE YEAR 1849.

Stocks and Shares.	Jan. 1, 1849.	Highest.	Lowest.	Jan. 1, 1850.
Consols	88⅛ ex div.	96⅛ ex div.	88⅛	96⅛
Exchequer Bills	42s. pm.	61s. p m.	35s. pm.	60s. pm.
RAILWAYS:				
Brighton	64½	82⅝	63	79
Birmingham and Oxford	25½	26½	24	26
Caledonian	22½	27	10	10⅝
Eastern Counties	11¼	12½	6⅜	6¾
Great Western	91	105⅝	48	58
London and North-Western	126	143	104⅝	111
Midland	87	99½	42½	45
North Staffordshire	13½	17½	7⅜	7½
South-Eastern	24	26½	16½	18⅝
South-Western	84	89	55	60½
York and North Midland	55	59½	16½	18
Boulogne and Amiens	8½	10½	5	7⅝
Northern of France	10⅜	14⅛	9½	12½

IMPORTS OF SPECIE.

A return made up for the year ending the 31st December last, of the importation of specie and bullion into the port of Southampton by the mail steamers, shows that the receipts have amounted to no less a sum than $33,943,275, or 6,788,655*l.* sterling. The subjoined table shows the receipts:—

GOLD AND SILVER COIN AND BULLION—IMPORTS FOR THE YEAR ENDING DEC. 31, 1849.

From Mexico, Central America, Chili, Peru, Bolivia, New Granada, California, &c.	£4,648,270
From Alexandria	728,851
From Constantinople	933,510
From Spain and Portugal	310,000
From other parts	168,025
Total	£6,788,650

Private letters from Palermo, dated the 22d Dec., state that the Government authorities had decided that the brimstone export duty of 10s. per ton should be levied from the 1st instant.

SALTPETRE.—The arrivals of late have been very heavy, 1700 tons having been landed in the past four weeks; and as the supply still to come forward from Calcutta is also large—3500 tons destined for this port are now at sea—the stock will necessarily much accumulate, as the deliveries between the present time and the period of arrival of the above quantity will not, according to the average of the past twelve months, exceed 1700 tons. During the past month, the finer qualities have declined 6d. per cwt., while the inferior sorts command former rates. Saltpetre has ruled comparatively high in the past two years; this has at length induced an excessive supply—the stock in this port is 3070 against 1780 on the 1st January last year—and a lower scale of prices must now, therefore, naturally be looked for. The imports into Great Britain during the past twelve months have amounted to 14,070 tons, against 15,900; the deliveries to 12,800, against 15,050; and the present stock is 3570 tons, against 2300 on the 1st January, 1849.

JOINT-STOCK BANKS.

Shares.	Companies.	Paid.	Div. p. cent.	Price.
22,500	Australasia	£40	£3	£24½
20,000	British North American	50	6	42
20,000	Colonial	25	5	7
20,000	Commercial of London	20	6	22
60,000	London Joint-Stock	10	6	17½
40,000	London and Westminster	20	6	25
10,000	National Provincial of England	35	5	36½
20,000	National of Ireland	22½	6	18½
20,000	Provincial of Ireland	25	8	45
10,000	South Australia	22½	—	17⅞ 18
20,000	Union of Australia	25	6	28½ 28
60,000	Union of London	10	6	12⅜

LEAD ORES

Sold at the Mine.

Mine.	Tons.	Price per Ton.	Purchaser.
East Wheal Rose	20	£17 6 0	R. Michell & Son.
ditto	15	14 4 6	Sims & Co.
Sold at Liskeard.			
Herodsfoot	75	£12 10 6	Sims & Co.
Trelawny	102	18 13 6	T. Somers
Sold at Bagilt.			
Black Craig	43	£10 1 0	Mather & Co.
East Tamar	70	14 15 6	Tamar Company.

BLACK TIN.

Mine.	Tons.	Price.	Purchasers.
Great Polgooth	10	£45 0 0	Williams and Enthoven.
ditto	10	45 0 0	Daubuz.
ditto	10	45 0 0	Calenick Company.
ditto	10	45 0 0	Williams and Co.
ditto	10	45 0 0	Daubuz; Calenick; Bissoe
ditto	2	41 0 0	Bissoe Company.
Wheal Anderton *Cwts.*	73	48 2 6	Daubuz.
ditto	12	44 12 6	ditto
ditto	10	39 0 0	Bissoe Company.
ditto	5	26 12 6	Calenick Smelting Co.

COPPER ORES.

Sampled Dec. 19, and Sold at Andrew's Hotel, Redruth, Jan. 3.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
North Roskear	127	£6 14 0	Tincroft	49	£4 5 0
ditto	122	5 5 0	ditto	47	2 0 6
ditto	111	4 16 6	ditto	45	3 10 6
ditto	71	8 13 6	ditto	44	2 8 6
ditto	70	6 9 6	ditto	36	1 16 6
ditto	69	5 19 6	Wh. Seton	77	5 9 0
ditto	68	4 6 0	ditto	69	3 8 0
ditto	64	2 12 6	ditto	63	2 8 0
ditto	59	2 7 0	ditto	61	5 0 0
ditto	54	2 5 0	ditto	52	5 7 6
ditto	45	4 12 6	ditto	51	5 15 0
ditto	40	5 13 0	Fowey Consols	85	6 8 6
North Pool	123	2 15 0	ditto	79	6 1 0
ditto	97	5 5 0	ditto	78	8 16 0
ditto	92	5 11 0	ditto	73	3 8 0
ditto	87	2 19 0	South Wh. Frances	90	8 17 0
ditto	76	5 10 6	ditto	84	8 0 6
ditto	70	3 5 0	ditto	41	8 14 6
ditto	62	1 9 6	South Wh. Basset	53	6 7 0
Consolidated	84	5 2 6	ditto	48	15 5 0
ditto	83	5 1 6	ditto	46	3 1 6
ditto	82	5 13 0	South Roskear	61	4 9 6
ditto	73	5 7 6	ditto	42	0 5 6
ditto	65	5 10 0	Wh. Henry	63	5 1 0
ditto	61	5 8 0	ditto	38	4 14 6
ditto	56	5 12 0	Wh. Vyvyan	34	5 16 6
Tincroft	71	4 16 0	Polberro Mine	15	10 11 0
ditto	65	4 4 0	St. Austell Consols	5	4 8 0
ditto	58	3 1 6	East Crinnis	4	5 10 6
ditto	50	4 5 6			

TOTAL PRODUCE.

North Roskear	900	£4663 2 0	South Wh. Basset.	147	£1210 0 0
North Pool	607	2353 12 0	South Roskear	103	284 10 6
Consolidated Mines	504	2707 18 0	Wh. Henry	101	497 14 0
Tincroft	465	1640 7 0	Wh. Vyvyan	34	198 1 0
Wh. Seton	373	1683 4 0	Polberro Mine	15	158 5 0
Fowey Consols	312	1948 9 6	St. Austell Consols	5	22 0 0
South Wh. Frances	215	1828 6 6	East Crinnis	4	22 2 0

Average Standard £109 5 0 | Average Produce 7⅛
Average Price per ton £5 1 6
Quantity of Ore 3785 tons | Quantity of Fine Copper, 271 tons 3 cwts.
Amount of Money £19,217 11 6
LAST SALE.—Average Standard £110 17 0.—Average Produce 6⅝
Standard of corresponding sale last month, 108*l.* 15s.—Produce, 7½.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal	84	£489 1 0
Vivian and Sons	880	3824 15 10
Freeman and Co.	456	2345 0 6
Grenfell and Sons	814	4368 10 9
Sims, Willyams, and Co.	461	2745 18 1
Williams, Foster, and Co	811	4016 9 4
Schneider and Co.	279	1427 16 0
Total tons	3785	£19,217 11 6

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth, Mines and Parcels.—Carn Brea 736—Tywarnhayle 401—Par Consols 252—Levant 188—West Wheal Buller 162—West Wheal Treasury 106—Wheal Tremayne 88—Wheal Agar 80—Wheal Mary 80—Charlestown United Mines 60—Alfred Consols 37—Herland 16—Godolphin 14—East Wheal Treasury 9—Trelyon Consols 8—Wheal Squire 5—Spearn Moor 5.—Total quantity of ore to be sold, 2247 tons.

Copper ores for sale on Thursday week, at the Royal Hotel, Truro.—Mines and Parcels.—Devon Great Consols, Wheal Josiah, Wheal Maria, Wheal Fanny, and Wheal Anna Maria 1222—West Caradon 361—Fowey Consols 255—Wheal Friendship 178—Poldice 139—Bedford United Mines 117—Wheal Jewel 35—Wheal Maiden 24—Tamar Slag 12.—Total quantity of ore to be sold, 2343 tons.

QUARTERLY SALE OF COPPER ORES IN CORNWALL—DEC. 31.

Copper ores, 36,499 tons (21 cwts.)—Fine copper, 2810 tons 2 cwts.—Amount of Money, 193,444*l.* 11s. 6d.—Average produce, 7⅛ and 1-16th.—Average standard, 104*l.* 11s.—Average price per ton, 5*l.* 6s.

COPPER ORES

Sampled Dec. 12, and Sold at Swanea, Jan. 3, 1850.

Mines.	Tons.	Prod.	Price.	Mines.	Tons.	Prod.	Price.
Cobre	73	24½	£19 9 6	Cobre	72	15½	£13 1 0
ditto	70	23½	18 18 6	Burra Burra	60	36½	30 14 0
ditto	67	24½	19 2 6	ditto	59	31½	27 4 6
ditto	65	23	18 5 6	ditto	58	34	28 4 0
ditto	58	23½	18 5 6	ditto	57	33½	28 4 0
ditto	48	23½	18 15 6	ditto	56	36½	31 3 0
ditto	47	23½	18 3 6	ditto	55	36½	30 16 6
ditto	44	24½	19 11 0	ditto	53	37	31 16 6
ditto	115	15½	12 11 0	ditto	52	32½	27 19 6
ditto	112	15½	12 16 0	ditto	50	32½	27 17 6
ditto	105	16	13 1 0	French Slag	71	4½	2 11 0

TOTAL PRODUCE.

Cobre	876	£14077 19 0	Burra Burra	500	14666 4 6
French Slag	71	181 1 0			

COMPANIES BY WHOM THE ORES WERE PURCHASED.

English Copper Company	33½	£640 13 9
Grenfell and Sons	235½	5339 7 9
Sims, Willyams, and Co.	305	5759 12 6
Vivian and Sons	588	8719 11 0
Williams, Foster, and Co.	177	5083 17 6
Schneider and Co.	55	1695 7 3
Mason and Elkington	53	1686 14 6
Total tons	1447	£28,325 4 6

Coprer ores for sale Jan. 17.—Cobre 96, ditto 92, ditto 81, ditto 64, ditto 62, ditto 55, ditto 90, ditto 82, ditto 74, ditto 65, ditto 60, ditto 52, ditto 80, ditto 77, ditto 76, ditto 70, ditto 42, ditto 25.—Guildford Slag 103, ditto 17.—Waterloo Slag, 27, ditto 25, ditto 2.—Burra Burra 40, ditto 6.—Vine Slag 13, ditto 8.—London Slag 22.—Total, 1507 tons.

MINING APPOINTMENTS FOR JANUARY.

5. Par Consols pay-day.
7. Par Consols sampling.
12. Par Consols sundry pay, &c.
14. Fowey Consols sampling.
19. Fowey Consols setting and pay.
21. Par Consols sampling at Par.
26. Fowey Consols sundry pay, &c.

THAMES TUNNEL COMPANY

The number of passengers who passed through the Tunnel in the week ending Dec. 29 was—No. of passengers, 26,530.—Amount of money, £110 10s. 10d.

CURRENT PRICE OF GOLD AND SILVER.

Foreign gold, in bars	per oz. £3 17 9	New dollars	per oz. £0 4 10½
Portugal pieces	0 0 0	Silver in bars (standard)	0 4 11½

EXPORTATION OF THE PRECIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for the last week:—Silver bars to Dunkirk, 30,000 ozs.; ditto to Rotterdam, 48,000 ozs.; Silver coin to Rotterdam, 26,000 ozs.; ditto to Belgium, 4000 ozs.; ditto to Dunkirk, 90,000 ozs.; ditto to Havre, 825 ozs.—making a total of 198,823 ozs.

NOTICES TO CORRESPONDENTS.

*** We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

The communications of Mr. Evan Hopkins, on the Gold Districts; Mr. David Mushet, on the Manufacture of Iron; and Mr. Matthias Dunn, on the Metropolitan Sewage Question, shall appear in the next Journal.

"A Constant Reader" (Penzance) will find Mr. Birkmyre's articles, on the Smelting of Copper Ore, in the Journal for May 20th and 27th, June 10th and 24th, 1848; also for February 3d and July 21st, 1849.

"J. F. S." (Wolverhampton).—The following are the addresses of the principal block-tin smelters in Cornwall:—Messrs. Bolitho and Co., Chyandour, Penzance; Daubus and Co., Cavedras, Truro; Williams and Co., Trethellan, Truro; J. H. Enthoven, Charlestown, near St. Austell; the Bissoe Bridge Company, near Truro; Mitchell, Calenick, near Truro.

"A Reader" (Brittany).—Mr. John Taylor, sen., is the inspector of the mines belonging to Greenwich Hospital. Mr. John Taylor, jun., is the manager of the Derwent Mines. Mr. John Taylor, sen., is not connected with the Sun Fire Office; but was arbitrator in a suit between the Earl of Hopetown and the Mining Company of Scotland, which is connected with the Sun Fire Office.

"E. I. C." (Broad-street).—Pipes cannot be cast from slag, it not being possible to anneal it. Wrought-iron pipes can be enammelled—Mr. Sturmer, of New York, has lately taken out a patent for that purpose in America.

"S." (Glasgow).—Mr. Deeley's patent, we believe, contains two inventions in conjunction, but separate in operation. The foundry furnace, to which the advertisement refers, is now successfully claiming the attention of the public; and the present season being unfavourable for out-door operations, it has engrossed the patentee's entire attention for the present; but we understand he has a furnace for smelting ores, which has been in successful experiment, and of its ultimate success there appears little doubt. Mr. Deeley has made iron of superior quality on his premises direct from the ore, without the aid of any motive-power to propel the air. He intends, ere long, to mature this, and introduce it to the public. His first foundry furnace in London is now erecting on the premises of Mr. Benbow, Eagle Foundry, Bankside; and testimonials, with ample particulars, will shortly be published in our Journal.

"A Student" (Durham).—We measure the quantity of electricity in many ways, but most conveniently by the amount of any chemical compound which it can decompose. A machine or battery, for instance, which, when arranged so as to decompose water, evolves from it four cubic inches of hydrogen and oxygen in one minute, is furnishing twice the quantity of electricity supplied by an apparatus which evolves only two cubic inches of the gases in the same time. The intensity of electricity is less easily measured; but is well enough indicated by the ease with which it can travel through bad conductors by its power to overcome energetic chemical affinity, such as that which binds together the elements of water, by the length of space across through which it can pass through dry air (as in the case of the lightning flash striking a tree from a great distance), by the attractions and repulsions it produces in light bodies, and by the severity of the shock it occasions to living animals. Tried by these tests, and by others, we find that the electricity of the friction machine of an insulated steam-boiler, or of a thunder cloud, has extraordinary intensity; while its quantity is excessively small. We speak very much within bounds, when we state that the whole electricity of a thunder storm would not suffice for the electro-gilding of a single pin, so insignificant is its amount. A small copper wire, dipped into an acid along with a wire of zinc, would evolve more electricity in a few seconds than the largest friction electrical machine, kept constantly revolving, would furnish in many weeks. No shock, on the other hand, would be occasioned by the electricity from the immersed wires, nor would it produce a spark or decompose water, so low is its intensity. A double-cell voltaic battery again produces electricity of such intensity, that its shock would kill a large animal, and it can force its way along very bad conductors; at the same time, its quantity is so enormous, that torrents of oxygen and hydrogen rise from the water it is made to decompose.

"A. Mole" (Liskeard).—The book is published by Mr. John Weale, 59, High Holborn, and is entitled "Wilme's Hand-Book for Mapping, Engineering, and Architectural Drawing, in which Maps of all Descriptions are Analysed, and their several Uses fully Explained: intended for the Use of Civil Engineers, Architects, and Surveyors; also for Naval and Military Academies, Engineering Schools and Colleges, and Draughtsmen. Illustrated with 43 large Plates, and 39 Woodcuts, &c. By B. P. Wilme, C.E." Notices of the work appeared in the *Mining Journal* of the 13th June and 4th July, 1846.

*** It is particularly requested that all communications may be addressed—

To the Editor,
Mining Journal Office,
26, Fleet-street, London.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL
Railway and Commercial Gazette.

LONDON, JANUARY 5, 1850.

The Mining Journal is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

We are at length come to the first Saturday of the year 1850, and we beg to congratulate our numerous readers on the setting in of the year under circumstances so auspicious as those with which we are now encompassed. We are justified in entertaining the confident expectation that, to thousands of those whom we now address, the new year will, in the amount of personal happiness and of individual success conferred, greatly exceed the year whose last shadows have just sunk below the ever-drooping west. Though we thus speak, we have a kind and thankful word to send after the year whose departure we have just witnessed. We are not altogether worshippers of the rising sun; but we cherish a reverent and a grateful memory of the setting radiance of 1849. That year has given a large, a liberal, a highly satisfactory measure of prosperity to all the branches of the industry and commerce of this great kingdom—to the mining pursuits of England, in particular, that settled progress, and that improved estimation, which are the direct consequences of the greater skill and vigour with which those pursuits have been prosecuted; and to this Journal, we may add, it has given that increased popularity and circulation which we prize and appreciate as we ought.

It will be our care to make the Mining Journal, throughout the new period upon which we have entered, if possible, a more faithful mirror, a truer reflex of the great mining interests of this kingdom, and of every strictly connate branch of British industry than it ever has been. To this end, we invite the communications and correspondence of parties conversant with practical mechanics, as applied to mines—of persons competent to furnish hints, as to improvements in management, and as to the value of new inventions, and of suggestions of every class, by which this important and improving occupation may be elucidated and enlarged. We go to our tasks under circumstances of great encouragement. We have already done well, and we expect to do much better; the large capital everywhere in hand, the comparatively small stock in all the markets, the orders for America and India which must of necessity occupy our iron districts soon, the full operation of the new Navigation Law from the first of this month, the prosperity of the public revenue, and the almost universal prevalence of peace, are so many concrete facts upon which we found our expectation of the fullest success, mining and commercial, which will characterise and crown the year 1850.

It is not expected, as we understand, that at the meeting of the Staffordshire ironmasters, held a few days since, any alteration was made in the previously existing prices of iron. Although the narrow margin allowed for profit by the former quotations would have fully justified a change, and the insufficiency of the stocks on hand would have equally accounted for a rise of prices, yet the prevailing opinion was that, for the present, the maintenance of the *statu quo* as to prices would best promote the interests of both masters and men throughout the great Staffordshire district. The fact is, as it appears, that the robust and vigorous principality is somewhat feared as a competitor in the iron market, and that it is the better policy to keep things on their present level, than by dashing out into altered prices produce that oscillation in the market, by which it is possible that all the masters, both Welsh and English, might pick up more blanks than prizes. We are advocates for fully remunerative profits, but we are advocates also for steadiness of business as contradistinguished from fluctuation, by which, though something may be occasionally gained, much more is too frequently lost. We approve of the decision of the masters, believing that whatever tends to confirm a settled and orderly course of business will ultimately be best for all parties. The iron trade throughout the central and northern districts of England and Wales, we are happy to know, has been now some months proceeding in a highly satisfactory manner. The amount of business has been such, that though profits have not been large in proportion, the actual remuneration has been as great as when less trade, but at a larger profit, was the order of the day. Our humble opinion is, that that description of business is fast coming to an end; we, of course, speak only of the large staple produce of the country. With respect to that branch of commerce, it is probable that the general experience of our merchants will, more frequently than it has been, be the experience of the ironmasters of Staffordshire—viz.: that to realise the same amount of profit, a larger sum must be turned; or, in other words, that the profits arising out of large transactions will be less, but that the remuneration will arise out of the larger business which will be done. Fulness of capital and universal competition will eat, as the adage goes, some of the gilt off our gingerbread.

The close of the quarter and of the year calls upon us to furnish our readers with the usual quarterly, annual, and comparative returns of the sales of copper ores in Cornwall, which we now submit.

ACCOUNT OF THE SALES OF COPPER ORES IN CORNWALL,
In the Quarter ending December 31, 1849.

Date of Sale.	Average Stand.	Average Produce.	Average Price.	Quantity of Ore.	Computed Quantity of fine Copper.	Amount of Sales.	Value of Ore to produce 1 ton of Copper.
	£ s. d	p. cent.	£ s. d	21 cwts.	Tons cwts.	£ s. d	£ s. d.
October.... 4	106 7 0	7¼	4 16 0	3998	283 6	19,126 13 0	67 10 3
,, ...11	102 7 0	7⅛	6 1 0	1926	164 19	11,587 15 6	70 5 0
,, ...18	98 1 0	9½	6 10 6	2594	245 9	16,938 10 6	69 0 2
,, ...25	110 8 0	6½	4 0 6	2713	166 7	10,906 6 0	65 11 3
November.. 1	104 8 0	7¼	4 18 6	3965	291 6	19,516 2 6	66 19 11
,, ... 8	102 1 0	8¼	5 11 0	2577	209 5	14,267 8 6	68 3 8
No sale on..15	—	—	—	—	—	—	—
November ..22	97 16 0	9½	6 11 0	2358	224 13	15,494 6 6	68 19 5
,, ...29	108 0 0	7	4 16 0	4220	293 16	20,121 16 0	68 9 9
December.. 6	108 15 0	7¼	5 2 6	4364	317 8	22,527 2 0	70 19 6
,, ...13	104 18 0	8	5 12 0	2887	229 8	16,124 19 0	70 5 10
,, ...20	100 18 0	9	6 7 0	2527	228 1	16,059 16 0	70 8 5
,, ...27	110 17 0	6¼	4 10 6	2379	156 4	10,773 16 0	68 19 6
Totals & averages for the quarter ending Dec. 31..	104 10 11	7·696	5 5 7	36,508	2810 2	193,444 11 6	68 16 9
Ditto quarter ending 30th Sept.....	97 14 1	8·066	5 4 10	37,103	2992 17	194,495 11 6	64 19 9
Ditto quarter ending 30th June.....	98 16 2	7·935	5 2 2	36,631	2906 14	187,167 15 6	64 7 10
Ditto quarter ending 31st March	—	8·261	5 4 5	36,093	2981 11	188,507 0 6	63 4 6
Ditto for year ending 31st Dec., 1849..	—	7·989	5 4 4	146,335	11691 4	763,614 19 0	65 6 4
Av. quarterly quantities & amounts for the last year	—	—	—	36,584	2922 16	190,903 14 9	—
Averages of 17 years ending June 30, 1833, to June 30, 1849	—	7·832	5 15 8	147,207	11529 0	851,047 0 0	73 16 4

In giving our last quarterly account, to Michaelmas, we were enabled to congratulate the miner on a slight improvement in his favour. We are glad to be able to refer to the present account in fully as satisfactory terms; inasmuch as, although the actual rise in the price paid per ton of ore was only from 5*l.* 4s. 10d., in the Michaelmas quarter, to 5*l.* 5s. 7d. in that just terminated, yet, as the average per centage of produce for the present quarter is fully 5 per cent., or 1-20th, below that of the preceding one, the improvement may, in the main, be regarded as being in about the same ratio. This is shown by the increased value of the ore to produce a ton of copper in the two periods; which, as seen in the right hand column, is from 64*l.* 19s. 9d. to 68*l.* 16s. 9d. This fact must not, however, be entirely relied on, as in favour of the miner to the full extent of the difference; since it may have cost him as much to raise a given quantity of ore, of the lower produce, as it might have done, had the per centage been higher. There is still an evidence of *some* improvement, be it more or less, in the miners' favour, which is, so far, an agreeable feature in the account.

The quantities of ore raised in the four several quarters of 1849 have been remarkably even; the smallest quarter being that ending 31st March, 36,093 tons, and the highest, that ending 30th Sept., 37,103 tons; the average of the four quarters being 36,584 tons. In like manner, the range in the quantity of copper—which embodies the two questions of quantity and per centage of produce in the ores—has not been material; the highest being, also, that of the Michaelmas quarter, 2992 tons, against the least quantity, of 2810 tons, for the quarter now under consideration; the average of the four quarters having been 2922 tons.

But, with these observations, anything like congratulation must end. For, when we take a more comprehensive view of the question, generally, if we carry our eye to the lowest line of the above table, and compare the figures with those two lines higher, being the results of the year 1849, we see that, whilst the average produce of the last year was somewhat higher than that of the last 17 years, the price per ton was about ten per cent. lower; making, together, a difference, in the value of ore, equal to 8*l.* 10s. per ton of copper; the average being only 65*l.* 6s. 4d., for last year, against 73*l.* 16s. 4d., the average of the 17 years. The effect of this, upon the miners' pockets, is, to give them less, by within a mere fraction of 100,000*l.* a year, for an equivalent quantity of ore, in the year 1849, than they received upon the average of the 17 years, from Midsummer, 1833, to Midsummer, 1849. This position is, nevertheless, not so unfavourable to the miners as that which has existed at other periods within the last two years. Let us, therefore, hope, that a state of things, for which there is no sufficient reason, may gradually be substituted by a return to an older and more favourable condition of the trade; such as existed before the recent legislative changes with respect to this branch of our national industry.

We must defer our remarks upon the Swansea sales to another occasion; a full consideration of that part of the question involving a heavy and intricate mass of calculation.

Colonial policy and misgovernment will shortly become synonymous words in the English language. In making this assertion, we do not mean personally to reflect on the noble earl who, at present, holds the seals of the Colonial Department. He, no doubt, came into office hampered by the regulations and acts of his predecessors, and will, when he retires to the "tranquillity of private life," leave his official desk in a still further state of confusion and complexity than he found it. A certain sort of fatality seems to cling to the measures of every Minister who steps into the Colonial Office, to the discredit of himself, and the dissatisfaction of those whose destinies he is appointed to misrule. Whig, Tory, Protectionist, or Liberal, all appear equally unfortunate when they attempt the direction of the colonies. Ireland, it has been said and acknowledged, is the difficulty of every Minister who takes office; but if the absurd policy which has hitherto been the guiding star of our colonial Ministers is obstinately persevered in, we shall have our transmarine dominions, each possessing its own peculiar grievances, emulating the distracted and disorderly conduct of the Sister Island. Every dispatch that arrives teems with some complaint; no sooner are they quiet in Canada, after pelting with mud the Sovereign's representative, than there is an outbreak at the Cape; now at Trinidad with general discontent everywhere. Our readers have, no doubt, seen from time to time reports in our Journal of the Quebec Mining Company. In our Number of the 22d December, we mentioned that a Mr. M'Donnel, and a party of Indians, had ejected Mr. Bonner, the representative of the directors, *vi et armis*, and retained forcible possession of the mines. On reading the detailed accounts, it would appear the proceedings have been characterised with a degree of lawless violence, which would better beseem a foray of the last century, in the most unsettled and earliest period of the colony, than at present, when we imagine, in every part of the Queen's dominions, that order prevails, and law is respected.

These mines, nearly 100 years ago, were discovered by Alexander Henry, an English trader, who miraculously escaped the massacre of the garrison of Fort Machilimackinac, by Pontiac, in 1763. On his escape, at Mica Bay he discovered and opened a rich mine of copper, and carried with him specimens of ore to England, for the purpose of forming a mining company. From some causes, no steps were taken to develope the mineral riches of the region until about the year 1845-46, when the Quebec Mining Company purchased several locations at or in the vicinity of Mica Bay, and also the whole of Michippicotton Island, of the British Government. Capt. Mathews, formerly in the service of the Asturian Mining Company, was dispatched from England to superintend the explorations. About 30,000*l.* has been expended on the mines; and the smelting operations were in such a state of forwardness, that the directors anticipated receiving returns for their outlay, in the shape of cake copper, before the navigation had closed. The company have purchased the lands from the Government, and have already paid about $60,000 as a royalty; but it appears that the executive have been selling property to which they had no title; and hence the present violent and ruinous proceedings. Upwards of 100 men, in the depth of winter, in an inclement and rigourous climate, are thrown out of employment, driven from their homes by a horde of savages, who have invaded them, and were ready to make good their claim by force of arms—to effect which they had plundered a brass field-piece from the Custom-House. It may, and we have no doubt will, be argued that the Government will dispatch troops, and reinstate the company in their possessions, bringing the agressors of the law to condign punishment; but how much better would it not have been to have prevented this? When the colony was transferred from the French to the English, although the land and subjects were ceded to the British Crown, the rights of private property were to be respected. If the demands of the Indians were too extravagant, they might have been lowered, so as to meet the just views and claims of all parties. From the first settlement of Pennsylvania, they have been found a tractable and honourable people, keeping good faith when their Christian brethren have violated its fundamental rules.

The property was purchased by the company, under the idea that the title transferred to them by the authorities was legal; and although Lord Elgin may wish to shift the responsibility on his predecessor, Sir Charles Metcalfe; as representative of the Crown, seeking the sweets of office, he must encounter the bitters, and, therefore, is bound to repair the errors committed by previous Governments, and to do justice to all parties, whether they are pale-faces or red-skins. The Indians will require the Government to pay them for the loss of the land, and the company will naturally look to have their title made good, and an indemnification of all losses consequent on the outbreak. Had the Indians been negociated with previously, we should not have had the pain of reading the disastrous accounts which have reached us of a struggle which probably will only terminate at the cost of a large amount of money and effusion of blood. In the meantime, it is distressing to think that enterprise is paralysed, industry is stopped in its healthy career, and our emigrant miners and their families exposed to robbery and slaughter by the incompetence and ignorance of those whose bounden duty it is to protect them, and who endeavour to apply the remedy when the patient is past cure. This is but an isolated instance, which it has been our particular province to notice, but the experience of years proves that the crying evil—mismanagement of the colonies—will never be remedied, until there is a radical change in the system of the Colonial Office, and the absurd supposition abandoned, that one man sitting in London has energy, knowledge, and capacity sufficient to govern 50 provinces, thousands of miles apart from each other, possessing all of them different features, and distinct interests.

THE MINING INTEREST—TESTIMONIAL TO Mr. SHARP.

For the clear and valuable statements, with relation to the mining interest, published in another column, we are indebted to Mr. Sharp, who is quite master of the question in all its bearings; and we consider this a legitimate opportunity for pressing his just claims upon the consideration of all interested in this branch of our metallic productions. The case put forward by the committee who have proposed the testimonial for his long and arduous services in the session of 1848, in support of the cause of the British miner, appears in our columns to-day; and, being personally aware of the extent of those labours, we cordially assent to the opinion expressed by the committee, in the statement which they have made, that Mr. Sharp has, to the present time, been but ill-requited for the services, and for the losses and expenses, to a very large amount, which the struggle for a whole session cost him.

The Iron Trade of Belgium.—The year 1850 promises to be a prosperous one to the iron and forge-masters of Liege, Charleroi, Seraing, Verviers, &c., to the zinc establishments of the Grand Montagne, &c., and to the coal proprietors of the extensive basin of Mons, and other colliery districts. Mining enterprise, which had been so depressed during the former part of 1849, in consequence of the stagnation of business generally, the scarcity of money, and the falling off in railway speculations, has assumed, during the last few months, a more cheering aspect. The arrangement entered into between the ironmasters and railway proprietors, for the former to furnish rails, locomotives, and all the necessary materials, and taking in return a portion of scrip, or shares, in part payment, has had a most beneficial result, and placed hundreds in work who looked forward with dread to this inclement season of the year. The negociations which had been pending between the Government and the directors of the Sambre and Meuse Railway having terminated satisfactorily, has caused a great activity in that important mining and metallurgic district. The commercial treaty concluded between Belgium and France will have also a highly beneficial effect on mining adventures, as, by the reduction on the import duties on iron, zinc, coals, &c., into France, it will cause a great activity, not only in the working in every branch, but also to the railway transit. The Great Northern Company from Paris to Amiens, Arras, Lille, Valenciennes, Mons, and Brussels, communicating with all the other branches, have already made a great reduction in their charges, and some very large orders for iron and coals have been received at Liege and the adjacent foundries, as well as at Mons. British *fonte* will be in demand for the large establishments.

Contract for Coals to Egypt.—The East India House have given notice, that on the 16th inst. they will receive tenders to supply 2000 tons of the following descriptions of coals, to be delivered at Alexandria, in Egypt:—West Hartley, Carr's, Buddle's, Davison's, Hartlepool West Hartley, and Stewart's Wall's-End steam-coal (screened).

Improved Communication with the Continent.—Arrangements that will greatly facilitate continental travelling have been completed between the South-Eastern Railway Company and the administration of the Boulogne and Amiens and Northern of France lines, to come into operation on the 1st Jan., 1850. Travellers will be enabled thereby to book through and obtain direct tickets from London to Paris, Brussels, Malines, Aix-la-Chapelle, or Cologne, and there is to be no examination of luggage until the passengers arrive at their destinations. The direct tickets issued at London-bridge, are to be available by any of the South-Eastern and Continental Company's steamers running between Folkstone and Boulogne, and by the English and French mail boats, as well as the company's steamers between Dover and Calais.

Electric Telegraph between France and England.—The concession signed by Louis Napoleon, and the Minister of the Interior, M. Dufaure, granting to Messrs. J. Brett, Toché, and Co. the right to establish an electric telegraph line between France and England, by a submarine communication across the Channel, arrived in town on Monday. The company propose to establish, by means of the electric telegraph, an instant communication between the two countries. The patentee guarantees that this telegraph shall, by the aid of a single wire, and of two persons only (the one stationed in France, and the other in England), be capable of printing, in clear Roman type (on paper), 100 messages, of 15 words each, including addresses and signatures, all ready for delivery, in 100 consecutive minutes.

Blasting Cartridge.—The following interesting blast took place at Carnsew Granite Quarry, with one of Copeland's cartridges, of 18 lbs. weight, including safety fuse and other materials:—Depth of hole, 9 ft.; dimensions of the rock: length, 34 feet; breadth, 24 feet; depth 18 feet—being a content of 14,688 cubic feet, or 1129·85 tons. Four large blocks in all, of about 130 tons were cast 6 ft. into the quarry, the heavy mass, removed fit for immediate working purposes, from 1½ ft. to 2½ ft. In addition to this enormous weight, the rock was bound in in three places, which were mastered. Not a particle of the stone was injured, the tamping not being blown. Mr. Copeland, we are informed, has been directed by the Honourable Board of Ordnance to forward to the Tower of London a considerable number of his blasting cartridges, for transmission to Bermuda and Gibraltar.

PROGRESS OF MINING DURING THE PAST YEAR.

BY J. Y. WATSON, ESQ., F.G.S.

The list of dividends paid in 1849 having been incomplete in our last, in consequence of the late arrival of one or two accounts, we insert it again this week in an amended form. We are glad to see Condurrow has paid another dividend, and hope it may prove the precursor of the like every two months. With metals at the present price, we cannot think it true policy to hoard up large reserves of ore, or, like a mine further west, "stock" up, as they term it, large quantities of tin, waiting for a better price; whilst the mine remains heavily in debt. The creditors, to our thinking, are good-natured people, and the shareholders, we presume, mostly Cornishmen.

LIST OF DIVIDENDS PAID IN CORNWALL AND DEVON MINES,

IN TWELVE MONTHS, ENDING DEC. 31, 1849.

Mines.	Amount.	Div. per share.	Paid-up.	Price.
Devon Great Consols	£34,304	£35 10 0	£ 1	£190
Par Consols	19,200	150 0 0	900	600
East Wheal Rose	17,920	140 0 0	50	625
Carn Brea	15,000	15 0 0	15	110
North Pool	11,750	117 10 0	45	500
South Frances	7,192	58 0 0	160	300
Levant	6,720	42 0 0	—	170
South Basset	6,400	50 0 0	—	450
Tamar Consols	5,760	0 12 0	3	8
Wheal Margaret	4,868	39 0 0	—	210
Great Polgooth	5,504	21 10 0	150	300
Wheal Friendship	3,840	30 0 0	—	—
West Caradon	3,840	15 0 0	20	100
Wheal Trelawny	3,640	14 0 0	7½	85
Trevi skey	3,120	26 0 0	130	140
Bedford United	3,000	0 15 0	2½	4¾
Great Work (Tin)	2,677½	22 10 0	—	—
Trehane	2,688	10 10 0	1	31
West Buller	2,560	20 0 0	10	380
West Providence	2,048	8 0 0	1	30
Tincroft	2,100	0 7 0	7	12
Providence Mines	3,640	32 10 0	—	—
Balleswidden	2,922	1 16 0	—	—
United Mines	2,000¼	10 0 0	—	—
Comfort	1,664	13 0 0	—	90
North Roskear	1,120	8 0 0	10	300
Wheal Seton	1,584	8 0 0	75	280
Stray Park	1,000	1 0 0	40	22
Great Consols	960	10 0 0	1000	220
Wheal Wellington	896	3 10 0	—	—
Condurrow	1536	6 0 0	—	90
Boscaswell	800	12 10 0	—	—
Spearne Consols	880	6 17 6	—	—
Wheal Mary Ann	640	1 5 0	—	33
South Caradon	640	5 0 0	5	400
Wheal Tamayne	512	0 10 0	9½	5½
East Crofty	470	5 0 0	—	65
St. Ives Consols	470	5 0 0	—	—
Wheal Franco	388	1 0 0	—	—

Total dividend paid on 38 mines £185,741 18

PAID ON WELSH AND OTHER MINES, DURING THE SAME PERIOD.

Lisburne	£6000	£60 per share.
Goginan	4000	40 "
Total	£10,000	

IRISH MINE.

Wicklow Copper ..... £2750 .... 10s. per share—£5 paid—£8 price.

FOREIGN MINES.

Cobre Copper	£48,000	0	0
St. John del Rey	29,000	0	0
United Mexican	4,940	5	0
Total	£81,940	5	0

MAKING A GRAND TOTAL OF

Cornwall and Devon	£185,741	18	0
Foreign	81,940	5	0
Welsh	10,000	0	0
Irish	2,750	0	0
Grand total	£280,432	10	0

To show the increased rate of dividends, we would remark that they amounted—

In the year ending	Dec. 31, 1846, to	£ 158,838	0 0	in 28 mines.
Ditto	Dec. 31, 1847, to	155,381	0 0	in 30 mines.
Ditto	Dec. 31, 1848, to	129,024	0 0	in 22 mines.
Ditto	Dec. 31, 1849, to	185,741	18 0	in 38 mines.

RAILWAY CALLS.—The total amount of "calls" declared payable by the respective railway companies during the month of January, 1850, so far as they have been advertised, is 1,734,279*l.* against 3,926,342*l.* in the corresponding month of 1849; 4,860,220*l.* at the same period of 1848; and 6,157,863*l.* in 1847. Of the sum required next month, 640,000*l.* is on account of foreign railways—viz.: the Great Luxembourg and the Northern of France. The total railway calls during the year amount to about 20,000,000*l.*, of which 18,000,000*l.* are for English, Irish, and Scotch, and 2,000,000*l.* for foreign railways subscribed for in England. The amount of calls in 1848 was 33,000,000*l.*, and in 1847, 42,000,000*l.*

BRITANNIA BRIDGE.—The tube has attained an altitude of 70 feet, and needs only five more lifts to place it.

ST. GEORGE'S STEAM-PACKET COMPANY.—The Master in Chancery who has the winding-up of the affairs of this defunct scheme, proposes to make a call of 100*l.* on each 100*l.* share, and of 25*l.* on each 25*l.* share held by those contributories included in the settled list, and upon whom no other call has yet been made. Two abortive undertakings, called the Norwich Yarn Company, and the Liverpool Crown Glass Company, have just been brought under the operation of the Winding-up Act.

TRING, READING, AND BASINGSTOKE.—The official manager appointed to wind up the affairs of this undertaking announces that a dividend will be paid out of the estate to all holders of scrip on which the deposit of five guineas per share was originally paid.

TRING, READING, AND BASINGSTOKE RAILWAY.—The dividend to be declared consequent on the winding up, before Master Richards, of this company's affairs, is to be 10s. per share to holders of scrip on which the deposit of five guineas per share was paid. This will come out of a sum of 6132*l.* in the hands of the Accountant-General.

NORTH OF ENGLAND JOINT-STOCK BANK.—It is stated that another call of 20*l.* per share is about to be made on the unfortunate shareholders under the provisions of that costly and interminable process, the "Winding-up Act," making in all 70*l.* per share already engulphed by this awful and most distressing concern.

The directors of the Scotch banks have just issued a notice to their depositors, that henceforth the interest allowed to them will be calculated on the minimum balance at their credit in each calender month, instead of on the daily balance, as heretofore. The Commercial Bank of Scotland has, at the same time, advertised a reduction in its rates of discount.

The dividend declared at the meeting of South Sea Stock proprietors, was as usual, 1¼ per cent. for the half-year, or at the rate of 3½ per cent. per annum.

CANADA COMPANY.—At the half-yearly meeting of proprietors, held on Monday, the dividend declared was at the usual rate of 6 per cent. The new directors elected were Mr. Alderman Carden and Captain C. Bosanquet.

LONDON DOCKS.—A half-yearly meeting of proprietors was held on Monday, when the usual dividend of 2½ per cent., for the past six months, was declared. The revenue of the company has increased, although the number of vessels has fallen off. It is finally intended to afford increased accommodation to the indigo trade, by erecting new warehouses, at a cost estimated at 82,000*l.*

SUNDERLAND DOCKS.—The works of these docks in connection with the railways are now completed.

GRIMSBY DOCKS—STOPPAGE OF THE WORKS.—It is reported that this stupendous project, as well as other constructive works in connection with the Manchester, Sheffield, and Lincolnshire Railway, have been suspended, in consequence of the inability of the directors to furnish funds for their continuance.—*Sheffield Times.*

CHARLEROI AND ERQUILINES RAILWAY.—It is expected that in another 10 months this line from Charleroi, and the entire line from Cologne to the frontier of France at Erquilines, will be completed. The last call but one will not be made until March, owing to the necessary suspension of certain works in the winter months.

ST. LAWRENCE AND ATLANTIC.—Arrangements have been made for the construction of the line, and for its completion in three years.

LONDON AND NORTH-WESTERN.—Considerable improvements and enlargements have been carried out at this company's principal stations at Stafford and Crewe. At the latter, owing to the accidents that have occurred, a handsome closed-in gallery has been thrown over the line, over which, instead of as hitherto crossing, the numerous passengers at this junction go.

NORTH STAFFORDSHIRE RAILWAY.—Traffic return for the month of Nov., 1849:—Dr.: To working expenses, canal carrying, limestone getting, and depreciation fund, 10,078*l.* 14s. 10d.; interest on debentures and canal shares, 6700*l.*; estimated balance available for dividend on share capital, 1284*l.* 7s. 3d. =18,063*l.* 2s. 1d.—Cr.: by gross receipts of canal and railway, 18,063*l.* 2s. 1d.

Original Correspondence.

THE COPPER TRADE.

SIR,—It may be worth while to remark that, although another year has joined the past, yet little can be said about the adoption in this country of improvements in the smelting of copper. But it is not so elsewhere. For in one of the youngest colonies of this country—South Australia—no less than four works have been erected for the smelting of copper ores alone, and some of them, where practicable, in the immediate vicinity of the mines, as they ought to be; and one of the latest propositions of the colonists there is, to erect laminating mills for manufacturing their excellent copper into plates or sheets for supplying India, and other countries, perhaps England. The United States also, and the free city of Hamburgh, have lately entered the list of competitors; and notwithstanding an almost unprecedented importation of Russian and Chilian copper, as well as a large home consumption of the imported metal, little or nothing is done here to meet these changes, which, to nearly every one who reflected on the subject, had appeared to be inevitable. It is true that the great influx into this country of the precious metals has, together with the advancement of civilisation, created a good demand for copper; and it is no less true that the copper miners of this country have no great reason to complain of the price they are now getting for their ore. But can it continue without a radical change in the process of smelting? It is not likely, inasmuch as the smelters of South Australia, the United States, and Germany, have adopted improvements compatible with their respective countries; and by those improvements they will, ere long, pour this useful metal into markets formerly supplied by this country, and, probably before the end of *this year*, even into the English market.

It is well known that the smelting of zinc has ceased in this country; and were it not for the introduction a few years ago of some improvements in the smelting of lead, the production of that metal would not have gone on in the increasing rate it has; and the same may be said of the most important of all the metals—viz.: iron. As to the trade under consideration, we have an inkling of what other countries can do, in the fact that the importations of copper, for the 10 months ended the 5th of last November, were 31,926 cwts., against 13,892 cwts. imported in the same period of 1848; and if one refers to the weekly imports of foreign produce, he finds sufficient evidence to believe that the total importations of copper for the year ending the 5th Jan., 1850, must be close upon 40,000 cwts.

In all human probability, this result would never have been if the nation had not been swamped by excessive speculations in railways; for the fact of one railway alone in a mining county—the South Devon Railway—having absorbed and irrecoverably sunk as much capital as would have amply sufficed to work more than the first 40 mines of your share-list, such a terrific loss of capital has indeed been a sad blow and great discouragement to the mining interest of Devon and Cornwall. Now, however, let us hope, with the inpouring of the precious metals, there will be more enterprise; and if a portion of it be directed to the copper trade, there is no doubt that copper, despite the probable cheapness of silver and gold, may yet be selling at the low price of 50*l.* per ton, and at the same time conferring great advantages upon this country.

Jan. 3. WILLIAM BIRKMYRE.

PROGRESS OF MINING AND MINE REPORTS.

SIR,—It is gratifying to observe the steady and progressive improvement, and the profitable results, of the past year's proceedings in this important branch of our national industry. This state of things is mainly owing to the degree of caution exercised of late by shareholders, and the consequent selection of those mines more worthy of support, and the abandonment of those presenting less promising prospects. As public confidence is now evidently getting established, and, doubtless, will cause very soon an increased investment of capital in our mineral resources, it is to be hoped that those interested will continue to do all in their power to preserve it, by checking or discouraging those abuses which formerly existed. Although mining is now brought to a reasonable degree of certainty—nay, reduced to a science, second to none—yet it is surprising how few practical miners, even in Cornwall, are competent to give a correct report of the real value of any unexplored ground. Indeed, some of the reports, which are highly extolled, as far as the setts in question are concerned, are extremely unsatisfactory to those who are acquainted with the subject—exhibiting a total want of knowledge in the character of ground to give bunches of mineral. Some bring forward and attempt to show parallelism of their respective mines with rich setts, when absolutely numerous barren rocks exist between them; and others again hold out prospects solely because the veins happen to be in the same line as some rich lodes in the neighbourhood, whatever might be the nature of the interposed rocks; and unfortunately such reports often induce parties to waste their capital in worthless prosecution, when it might be more usefully employed in other districts. To make a just report for the *guidance of legitimate undertakings* requires no ordinary degree of practical experience. A rich mine does not necessarily make the captain superior to the one who may happen to be in a poor mine; nor does it follow that a person engaged all his life in any given mine should be capable of giving a correct opinion on another. It is a peculiar acquirement, obtained from an extensive experience in every description of mines and rocks, possessed only by a few, requiring great judgment, caution, and circumspection in the employment of it. Were we to judge from the innumerable reports furnished to the public through the medium of your useful Journal, and also by means of various prospectuses, prepared for private circulation, it might be imagined that any miner, or even an ordinary surveyor, would be competent to inspect a mineral property, and to report thereon. But this is a great mistake; it is true, reports to uphold the prospects of certain speculators, to sell shares, &c., are easily got up; but the office of inspecting, and giving *a just idea of the character of any mineral ground*, of the primary and transition class, founded on its own merits, is a much more abstruse and responsible calling. The public have a right to consider such document as evidence by which they are to judge the real value of any given mine, be it good, bad, or indifferent. The observations of your correspondent, Mr. Ennor, are very apposite; the parallelism of Wheal Golden with East Wheal Rose—the Antimony and Wheal Bawden with Treburget, &c.—are all improper deductions; they are situated respectively in independent channels of ground, having no metalliferous connection whatever, and, therefore, should be supported solely on their individual merits. The same may be said respecting the mines east and west of the Great Devon Consols; whatever discoveries may be made in them will be found totally distinct to the Devon Consols bunches, and influenced by *other* channels of ground, and cross-courses. I pointed out this important question, in your Journal (July 2, 1848) in a letter from Tavistock, on the comparison of the Ashburton Mines and the Devon Consols, &c. Prospectuses and reports are now more carefully examined and scrutinised by large shareholders than heretofore; therefore, it is to be hoped, more discretion will be exercised by projectors and reporters in future in preparing reports, and bringing them before the public so as to sustain the character of legitimate mining, and render it, as it ought to be, permanently as safe and as profitable a speculation for the employment of capital as any other, when judiciously and economically conducted.

London, Jan. 1. EVAN HOPKINS.

P.S.—Amongst some of the prospectuses sent to me for examination, and to report on, I have even found east and west lodes represented as parallel to some distant north and south lodes! Hence the term "parallelism" is as much to be depended on as the words "kindly and promising," so commonly used in reports.

WHAT IS, AND WHAT IS NOT, THE COST-BOOK SYSTEM?

SIR,—You have been asked on various occasions to explain what the Cost-book System really is; and if I have gained anything by studying the explanations given from time to time in your Journal, and by a somewhat lengthy practical experience, the grand principle of it is this:—Each shareholder is liable—individually, mind—for the whole debts of a mine; but, as a safety-valve, and one which no other principle admits, at every two-monthly meeting a statement of the whole debts of a company must be made out, and a call levied rateably upon each shareholder, to liquidate them; and any one person, not wishing to remain longer a shareholder, may pay his proportion of debts, and relinquish his shares, and so get rid of all liability for the future. These calls, *in safe and well-conducted mines*, must continue every two months, until profits are made, or, at least, till the working costs are met by returns of ore.

I am led into these remarks because, as mining is becoming popular, it is right the public should know their true position, and not be led away by *delusion*, to end hereafter in disappointment.

It is quite clear that no stated capital can be defined for a cost-book mine. I was, therefore, surprised the other day to read a prospectus, offering shares in a mine *on the Cost-book System*, where the liability is to be limited to 4*l.* per share. I shall not mention the name of the company, because I believe it to be respectable; and as it is merely this new system I condemn, as one likely to injure the mining interests, if generally adopted.

Let us suppose for a moment that I am a poor inexperienced greenhorn in mining matters; I read the prospectus of a company, offering almost certain success, and my liability is not to exceed 4*l.* per share. I find I have 200*l.* that I can afford to lose, and therefore to speculate with, but more than this sum I could not well spare. I resolve to take 50 of these shares, and pay my deposit, fully prepared, when required, to pay up the 4*l.* per share, and then rest in a blessed state of security, hoping some fine morning to find my 200*l.* with another "0" on the right side of it. Well, circumstances (which sometimes alter cases) so will it, that a larger outlay is required to prove the mine than was at first supposed (this being a very common case), and I find to my astonishment another call made upon me! Naturally indignant, I (that is, Mr. Greenhorn) refuse to pay, because I was told my liability was not to exceed 4*l.* per share; and I am then quietly informed, that if I refuse to pay calls, I must be sued by the creditors, to whom, I have rendered myself personally liable! Would it not be natural for me, in such a case, to denounce mining as a system of humbug—and heartily d——n all concerned?

It is to prevent such scenes as this that I address you. I have now before me the prospectus of another company, starting to purchase a mine "now at work on the Cost-book System;" and where the capital is given as —*l.*, in — shares of —*l.* each, and then in large type, "*No calls*," "*No liabilities.*"

Here, again, I shall not mention the name of the mine (although advertisements have of late informed us that its old name, significant at least of prosperity, has been changed to one more appropriate), because, *malgré* this unhappy mode of christening, I believe the speculation to be a good one; and, further, the directors ought to be obliged to me for calling their attention to an error, the consequences of which, sooner or later, will, if persisted in, injure their property and disappoint their shareholders.

London, Dec. 26. ARGUS.

VENTILATION.

SIR,—Is the expensive game which Dr. Boswell Reid is playing with the national resources never to have an end? The ventilation of St. Stephen's seems to be an interminable process. Can it be matter of surprise that Mr. Barry, an eminent architect, and well qualified to judge, should have had his forbearance severely tried by such tedious tomfoolery, and so as to have led to an open rupture? I confess that it seems to me very questionable whether Dr. Reid has not yet to learn what "be the first principles" of a sound and scientific ventilation. As to washing or otherwise depurating the air for aristocratic lungs, it seems to me to be the veriest trifling. If the Lords and Commons were hermetically sealed up, with the exception of two orifices for air—one for its entrance, and the other for its exit—it might be effected, and the common air be left for the unprivileged many. The impure air of respiration and combustion naturally ascending on the wings of heat, which gives the heaviest gases buoyancy, might flow through a central opening in the ceiling, and the stream of air thus aggregated, be received in a dome above, like the capital of an alembic, and, by a pipe, at once conveyed to the focus of heat—a furnace.

This is the simple principle—one understood by all—and must needs be entirely efficient. One thing I am quite sure of; Dr. Boswell Reid would be all but the very last person the coal miner would be likely to summon to his aid in the ventilation of his collieries, judging from the interminable delay in his present task; the public can only judge from what is before it. If Dr. Reid understood, *ab initio*, the true principles of ventilation, whence this astounding delay, extending through a period of years? If, on the other hand, he has been engaged by Government, merely to make a series of EXPERIMENTS at the national expense, the complexion of the case is entirely altered. One thing is certain—*forbearance must have an end.*

I do not wish to say a single word against Dr. Arnott's ventilating valve, as I have a very high opinion of everything that comes from that source, and Dr. Arnott is a pre-eminently scientific man. Many persons have, however, complained to me that it does not exclude the occasional *ingress of smoke* from the chimney.

Perhaps you will allow me now to state the very simple and efficient plan I have recommended and adopted for the ventilation of the apartment in *winter*, when there is a *fire* in the grate. To obtain fresh and pure air from without is an *easy* process; but to get rid of the impure and mephitic air lingering near the roof, is not so obvious. I use a trumpet-mouthed pipe; its orifice is at the ceiling. This, composed of tinned iron, enters the wall, and descends the chimney, and its lower orifice, *curved downwards*, enters between the bars of the grate below; by reversing the orifice below, no ashes will enter the tube. All the deleterious air is thus withdrawn from the room, and the space which it occupied, and where it lingered, and is constantly consumed in the grate. This arrangement, simple and inexpensive, acts with all the power of an exhausting pump. A gutta percha tube might descend by the side of the bell-pull, and be connected with the fire below, by means of an iron or copper tube; while the gutta percha may be made sufficiently ornamental. I mean, however, to resume the important subject of ventilation in an early Number of the *Mining Journal*.—J. MURRAY: *Portland-place, Hull, Jan.* 3.

Erratum.—Read, *or*, not "on," the principle of the piston.

COLLIERY RAILWAYS—(*Continued*).

SIR,—Notwithstanding the great improvements which have taken place in the construction, maintenance, and working of railways, since the extension of the system, and its adoption as a means of general internal communication, colliery railways and tramroads remain much in the same state as they were 30 years ago. Whoever has had an opportunity of recently inspecting the coal and iron-works in the midland and southern counties, could not fail in observing the crude and slovenly manner in which the transit of the produce is conducted. In modern works some attempts have been made to approximate, in design, an improved construction, but the benefits which ought to accrue from it are lost by the inattention shown to maintain the railway waggons and machinery in an efficient state. In the old railways, a sturdy adherence "to things as they are," however bad they may be, is the prevailing policy. At a time like the present, when the depressed state of "the trade" renders it imperative to produce the coal at the lowest possible cost, in order that a profit should be obtained, it may be worth while to call the attention of coalowners to the subject, and endeavour to impress upon them its great importance. The requisite alterations might generally be made without any interruption of the traffic, and at a comparatively small expenditure of capital; whilst the additional labour bestowed in maintaining the railways in an efficient working state would be amply and immediately repaid by the diminished cost of the horse or other motive-power employed on them. In this neighbourhood it is a usual thing to see four horses, moving at a speed of not more than three miles an hour, with a net load of 12 or 15 tons of coal on a railway, descending in the direction of the load! Nor is this wasteful expenditure confined to the surface, but generally exists in much more aggravated form underground, entailing great loss by the breakage of waggons, maiming and killing men and horses, and causing great interruptions to the mining operations, by the waggons getting off the rails, &c. As an instance of the saving which may be effected by a due attention to these matters, it may be mentioned that, by the expenditure of about 100*l.*, in re-laying and ballasting a railway in a level heading of about three-quarters of a mile in extent, two horses were enabled to do the same work which previously was performed with difficulty by five, thus effecting an absolute saving of at least 150*l.* per year on this item of expenditure alone, besides preventing the losses incurred from the accidents which were constantly happening from the imperfect state in which the railway was maintained.

Another, and a more striking, example of the certain benefit which is to be derived from due attention being given to this important subject, may be found in the improvements which have recently been made in a colliery railway belonging to the Blaenavon Iron Company, from the designs, and under the superintendence, of the company's able engineer, Mr. T. D. Steel. In the Journals of the 30th June and 14th July last, some notice was taken of these improvements; but the information conveyed in the former communication was so meagre and imperfect, as to convey but little real information on the subject, leaving your readers to form erroneous opinions on the merits of the scheme. As a remarkable instance of the benefits resulting from adopting improvements in the construction of colliery railways, as far as circumstances will admit, and in

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illustration of what has been already said in these communications, a brief sketch of the previous and present plans may possibly interest your readers, and induce other co-owners to follow an example which would so obviously promote their interests.

It appears that to the colliery in question, the coal was worked to the dip, and had to be conveyed upwards of a mile to the level's mouth; and that two powerful horses could bring only one tram of coal out at a time. The surface of the ground rises rather suddenly at the entrance of the mine for about half a mile, and then descends for about the same distance. Through this ridge a heading, or small tunnel, was driven a mile and a quarter in length, and with a total fall of 90 ft. in the direction of the dip of the strata. With some exceptions, it is 6 ft. high and 5 ft. wide; the gradients are various, and range from 1 in 20 to 1 in 90—no two planes having the same inclination. The gauge of the tram-road is 2 ft. 2 in. Through this *tunnel* the whole of the limestone used at the works, and the whole make of iron, was conveyed, constantly employing 24 horses.

The mere description of these means of conveyance is quite sufficient to show the necessity there was for some new plan; for it is obvious to any one at all conversant with such subjects, that the supply of minerals thus conveyed must necessarily be very limited in quantity, and exorbitant in cost. To remedy evils of such importance, and so materially affecting the prosperity of the company, Mr. Steel proposed, and has executed a railway on the surface, crossing the ridge of the hill and communicating with the underground works by a pit at the dip. The two inclined planes are worked by a stationary engine, placed on the ridge or top of the hill. By these simple and well-known means, the labour of 45 horses is dispensed with, a saving of 9d. per ton effected in the cost of the coal, an increased supply is obtained, and the profits considerably augmented. The cost of these improvements has been about 2000*l.*, whilst a low estimate of the savings and additional profits accruing from them is stated to be at least 3000*l.* per annum.

In both these instances the good policy of improving the means of transit is shown to be immediately remunerative, besides giving the capability of very considerably increasing the quantity produced. Indeed, the many advantages resulting from a proper attention to this important subject are so self-evident, that it is difficult to assign anything like a reasonable cause for the neglect so very generally shown to it. It is by no means necessary to observe the extreme nicety of construction and maintenance which is imperatively required on public passenger railways; but a nearer approximation to efficiency than what is now attempted may easily be obtained at a comparatively small cost, and with results as certain as they would be beneficial.—J. Richardson, C.E.: *Neath, Jan.* 1.

MINING IN IRELAND.

Sir,—The character you have always sustained for fair play and impartiality will, I am sure, induce you to afford me a small portion of your valuable space, for a few observations on a letter which appears in your Journal of the 22d December, signed "A Cornishman."

Whether your correspondent be a Cornishman or a Cockney is immaterial; but I ween that he has been recently sped from the vast "*wen*" on the shores of Bantry to "*costean*" for metal of some sort, in order, as they say in Munster, "to make out the cause anyhow." Ireland, notwithstanding all her woes and miseries, seems to have attractions for adventurers, who seek either to pick up mineral prizes, or take root in her fertile soil; and they are always welcomed. Poor Paddy is ever ready with his "*Cead mille falthe*" for the stranger.

Well, Sir, "A Cornishman" was a lucky wight—he found what he wanted; and he might, according to the vulgar saying, have "ate his cake" and been contented, without disparaging any portion of the children of his benefactress; but base natures and bad hearts too often blemish humanity. To praise his own countrymen for their skill, energy, and integrity, would be commendable in your correspondent; but, while lauding Englishmen, he might have avoided aspersing and humiliating Irishmen, among whom he lives, and of whose hospitalities he doubtless shares. Gratitude is, however, alien to the brains and bosoms of some dull bigots. I must for the sake of true Britons, whom I honour and esteem, say that "A Cornishman" is not a good specimen of a genuine and well-bred Englishman.

Your correspondent states "all that is wanted to make this (Ireland) a great mining country is English agents to carry on operations—that several attempts have been made in mining in the south-west part of this county (Cork) by Irish companies, and though conducted by experienced Cornish agents, have, with only two or three exceptions, been abandoned, not from poverty or bad management on the part of the agents, but merely from the company being composed of "*Irishmen*," who by the time the mines were got into good working order were sure to come to loggerheads, each fighting for power and place, and no matter how promising the mine, her fate was sealed from that time."

In order to make the word "*Irishmen*" conspicuous, your classic correspondent adorned it with inverted commas, and gave it all the graces of italics; thus manifesting his kindly feelings as a successful explorer of the mineral wealth of Ireland. May I be permitted to ask if this either real or assumed Cornishman is capable of forming a correct opinion of the capacities of Irishmen? Indeed, I have a notion that his knowledge of Irishmen and Irish mining is equally shallow and scanty. "*A shebeen-house boozer*" is just as competent to pronounce upon the character of one, as a hanger-on about the London Docks is to judge of the other. "A Cornishman" may, perhaps, have some acquaintance with these things; but he knows very little of Irish companies or Irish mining.

True, companies have been formed, and money has been spent; but mines have not "been abandoned" by the proprietors coming to "loggerheads;" quite the contrary. Too much unanimity in placing power and confidence in the hands of English agents, who excited high hopes and earned heavy losses, was one of the reasons for not prosecuting profitless works; and, nothing but disappointment having been realised, it was deemed prudent to pause, and button up the pocket, in order to await more propitious times, and obtain the aid of other agents of less pretensions, but possessing more claims to consideration than the Cornish operators. Anxious, Sir, as you have ever been for the good of Ireland generally, but particularly for the promotion and prosperity of its mining interest, it is right to tell you that certain Cornish agents have been instrumental in retarding Irish mining; and that Irishmen, instead of falling to "loggerheads," and "fighting for power and place," have been most unanimous in endeavouring to promote mining operations in this county. Success might have attended their efforts, if not marred by prodigal pretenders. Glad I am indeed to hear that the Bantry Silver-Lead Mine is progressing to prosperity. "A Cornishman" and his English agents are, doubtless, all concord; they are not, surely, at loggerheads? The miners and contractors are paid, and the banker's account is "all right." With these elements of success, and a rich mine, "A Cornishman" will soon be in a position to purchase some territory under the commissioners, now in the market; and I wish that he may, by his industry and integrity, become hereafter one of the Corinthian pillars of the State.

Dec. 27. ——— A Gurtavalligite.

MINING INVESTMENTS—HOME AND FOREIGN.

Sir,—I should not again have intruded on your columns, but the letter of "Anglo-Celt" calls for a few remarks in answer to his last. Were I to reply fully to his letter, it would involve a discussion which might be prolonged, *ad infinitum*. I have always advocated the investment of British capital in home mines in preference to foreign. If "Anglo-Celt" will refer to last week's Journal, he will see that three foreign mines have alone paid dividends to the amount of 81,940*l.* 5s. during the last 12 months; so that all the capital that has been expended on foreign speculations has not been irretrievably swallowed up—in fact, my only object in noticing the first communication of "Anglo-Celt" was to prove that he was not justified in the deductions which he was pleased to draw in his sweeping assertion of the value of foreign mines, or that capital could be more *securely* employed in Ireland than in Spain or Mexico. I, too, have resided in Ireland, and by no means wish to underrate the bodily capacity of the Irishman, who, when transplanted from his native soil, becomes an efficient labourer. We daily have opportunities of seeing them in London; and it is to their influx we may, in a great measure, attribute the progressive and steady increase of our own poor's rates. Had a general system of money payments, in lieu of lands, being given them for labour, been introduced into Ireland, I have no doubt the moral character of the peasantry would have been improved. Everyone knows the stimulus that money gives. The great difference between the Anglo-Saxon and the Celt is this—the former depends on his own exertions, while the latter waits till aid from without steps in to relieve him. It is a well-known fact that, at the time of the prosecution of the Government works, hundreds of thousands of workmen in Ireland preferred the labour test to the necessary culture of the fields. "Anglo-Celt" informs us of the great good which was performed by the aid of 97*l.* 10s. under his superintendence. Are there not landlords and other proprietors in Ireland? Cannot they do something to increase the value of their own property, or is British capital to be perpetually drained, and its donors received with unthankfulness and ingratitude?

If I were inclined to be sectarian, I might attribute it to the religion of the majority of the inhabitants, and could refer to concomitant examples in Northern and Southern Germany, Protestant and Catholic Switzerland, Spain, and Italy, enjoying all the blessings of a fine climate, lower in intelligence and industrial resources than cold Protestant Scandinavia, where the land, owing to the climate, is covered with snow; and, lastly the provinces of Ulster and Munster. I do not wish in any way to defend the proceedings of the Board of Works; there is no doubt, with their resources, they might have effected more than they really did, but, as in all jobs, a too large staff rendered their machinery cumbrous and ineffective. The Devon Commission, in their elaborate report, stated "that the best directed measures of Parliament will not be sufficient, unless aided by the active and steady exertions of the people of every rank and condition in their respective spheres;" and until the Irish, from the great landed proprietor to the starving cotter, prove they are willing to exert themselves to ameliorate their own condition, they are not deserving of foreign aid. Let agrarian outrage and assassination cease, together with the unwearying agitation, and British capital will readily flow to a country so near our shores as Ireland. Unfortunately, it is not only the popular writer I quoted in my last who has written so tritely of the Irish peasantry, but, from the earliest periods, the same remarks which were made then are apposite at the present day. Dean Swift ascribes the degradation of the country to the "*baseness, ignorance, thoughtlessness, squandering temper, slavish nature, and uncleanly manner of living of the poor natives, together with the cruel oppression of their landlords.*" The description of the habitations in Ireland by Lithgow, the Scotch pilgrim, in 1619, prove they have not progressed from that period to the present; while Spenser, in his *Exordium*, states "it is the fatal destiny of that land, that no purposes whatever, which are meant for her good, will prosper, or take good effect." A long list could be given of names, all agreeing in their main characteristics. Surely all the writers on Ireland are not deserving of the "*lie direct.*" That Ireland may now be perfectly tranquil, and property and life secure, I believe the patriotism and fervid warmth of an Hibernian will lead him to imagine; but I question much whether the sober-minded Anglo-Saxons have such prurient imaginations, or wish to risk encountering the fate of Lord Norbury and Major Mahon. Every Englishman likes to follow the axiom of the Duke of Newcastle, and do "what he likes with his own." When this is fairly demonstrated in Ireland, the resources of that country may be developed by extraneous capital; but until that period the English speculator will prefer investing his capital in countries where he risks only his money, not his life.

London, Jan. 2. ——— A Lover of Fair Play.

THE STATIC AFFECTIONS OF MATTER.

Sir,—Permit me to initiate a discussion on some matters of *pure science*, by giving to your readers the following axiom, as the text of a subject whose importance, in its full development, may be discovered to be paramount to any other consideration which finds space for public attention in the pages of your necessary Journal:—

Axiom I.

THE STATIC FACULTY OF FLUIDS, UNDER THE IMPULSE OF CONSTANT FORCES, IS PROPORTIONATE TO THE THERMOSPHERIC CONSTITUTION OF THEIR ATOMOSPHERES AND MOLEOSPHERES CONJOINTLY.

This axiom, although standing No. XLVI., Vol. II., of my private collection of scientific data, I have assumed as the textual leader of a series of papers which, besides exemplifying the constitution of matter by the more apparent constitution of the universe, will, in the retrograde order I have laid down, tend additionally to the progressive enlightenment of many of the most abstruse subjects, which at present disgrace our industrial operations, in a manner divested of the formality of a specific treatise, and, therefore, on this account, more discursively and promiscuously intelligible. The context of this axiom forbids that I can disrobe it of those *in presenti*, "*long unintelligible words*" in which it is clothed; but lest your readers, or some of them, should complain that, because they cannot understand the meaning of that which for the present cannot, without anticipation of subject, be explained, they are silent on the subject, I proceed to couch the axiom in that every-day dress, in the tautological folds of which your hypercritical correspondents love to enshroud themselves, thus: —*Fluid bodies enjoy the faculty of motion, whose celerity is greater with equal dynamic impulses than what usually obtains with other cognate bodies, less endowed with constituent heat, at equal pressures and temperatures.*

Although this axiom would seem to be suggested by the moot point betwixt myself and Mr. D. Mushet, in respect of the modified functions of a blast-engine, yet such is not the case, as it is more than seven years since, influenced by the cogitation of other more conclusive *facts*, I was led to formularise their etiology in such an axiomatic form, as has ever since 1826 been my custom; and led by the apparent similarity of the relations of elasticity, claimed as a property of hot-air by Mr. D. Mushet, I have, on this occasion, selected this axiom as a sort of peg whereon to hang Mr. D. Mushet's abandoned progeny, left by its author, as Voltaire satirically observed of Condorcet's book—*mis a la porte de tout le monde*—as an inducement for him to take that farther notice of it, when I shall have removed by this medium some of the apparent stain of its hybrid birth, and enable him, or others, to substantiate or disprove that common air, under any and what circumstances, enjoys the faculty claimed for it.

It is a well ascertained fact that coal-gas, under the impulse of a given pressure (say 30 inches column of water), will move through a conduit with greater velocity than atmospheric air, proper allowance being made for the extra velocity due to the difference of density of coal-gas and common air, on the principle that the velocities of fluids, under given pressures, is inversely as the square roots of their densities; and the question with me has been, as I mooted in my paper, in *Mining Journal*, No. 747, page 602, whether hot-air, at the same density as coal-gas, does really possess this curious faculty, to develope which I have instituted the present discussional inquiry.

What renders this fact more remarkable, and tending to exclude atmospheric air, whether hot or cold, from a participation in this property, is, that whilst with pure hydrogen, this tendency to flee from a *vis-a-tergo* is at the maximum, every increment of carbon proportionately abates it; nor can we be certain, in the absence of corroborative experiments, whether this property of hydrogen, and some, if not all, of its compounds is, or is not, dependent upon some relations of the capacity of such bodies for heat, notwithstanding that hydrogen and carburet of hydrogen possess, numerically, the greatest calorific capacity of all bodies whatsoever, the former being 3·2936, and the latter being 1·493. Experiments are said to have demonstrated that with $C_2 H_2$ this *static faculty* is greater than with $C_4 H_4$, and considerably less than with $C H_2$, but experiments, so far as I know, are wanting to indicate the relations of thermic capacity, or, according to the phraseology of the axiom, *moleospheric thermosphere*, which these latter bodies bear to their congeners, whence we might have been able to trace the further connections, supposed to exist, betwixt this *static faculty* and the qualities of the higher carburets of hydrogen.

Once proved that this faculty and the specific capacity for heat of bodies are either identical, or, in some close relationship connected, it will no longer be difficult to suppose that "a given impulse communicates more motion to air (N_4 O) at 600° than at 60° Fahrenheit."

Again, if hydrogen drags a proportion of this curious property into all of its combinations, the vapour of water, H_2 O, will acquire, in its dynamic relations a new interest, for the study of those to whom the perfection of steam-engines is more especially set apart. Upon high steam and low steam a new series of economics are started to view, and who can tell that the long-vaunted superiority of high over low-pressure steam may not shortly realise for itself, by proof, what has long been theoretically suspected, that a very proximate limit occurs to the utility of heated steam, in the want of impulsive force at high elasticities, increasing downwards, with decrease of temperature, to the more moderate limit of thermic elasticity. For my own part, and reasoning upon data, which cannot well be given here, I am inclined to think, as my axiom expresses it, that increased elasticity, from the adventitious infusion of heat, is, in all perfectly fluid bodies, attended by this *static faculty*, provided the heat be actually in acriform combination; but that no such thing obtains when the heat exists in a sensible state, or as showing an elevation of ordinary temperature; but of this I am not sure, and, therefore, after modestly so expressing it, can only throw myself and axiom upon the scientific acumen and suffrages of those of your enlightened correspondents, to whom such subjects are "trifles, light as air."

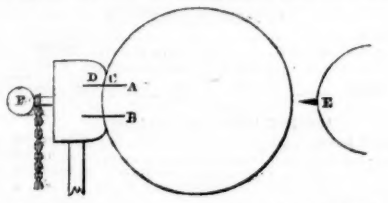
Having instanced thus much of the extrinsic features of my axiomatic proposition, I propose to continue its consideration in a future paper, and, in the meantime, hope for the *critical* remarks of others upon what has been advanced, as an elementary safeguard to the rectitude of our progress in future. In the course of this discussion, if conducted spiritedly and with proper object, the most abstruse relations of metallurgy will, with flashes of brilliant ideas and new views of metallic metamorphoses, peep out thicker and faster as the subject becomes more and more developed.

Greenwich, Jan. 1. ——— Wm. Radley, Ch. E.

THE PHILOSOPHY OF THE ELECTRICAL MACHINE.

Sir,—In the *Mining Journal* of the 15th Sept., 1849, page 442, reference is made to certain views entertained by M. Becquerel, concerning "Frictional Electricity;" and some conclusions are given, at which he has arrived from facts observed by M. Peltier, which conclusions seem quite at variance with known facts of electrical science. It would appear that M. Peltier, in making his calculations, in order that he might avoid the errors of others, deducted the electricity "which recombines at the very source where it is liberated, when no obstacle to its recomposition is present." M. Becquerel's conclusions on the subject are as follows:—1. When the decomposition of the two electricities by friction is brought about more rapidly than the recomposition, the electric tension increases.—2. If the recomposition is made in an appreciable space of time, the faster we turn the machine, the higher will the maximum tension rise, and—3. There must be a certain maximum intensity which cannot be passed, seeing that the two electricities always recombine on contact, the friction being so instantaneous, that the separation of the two bodies can be effected in an infinitely small space of time; whence we may comprehend that the disengagement of electricity is independent of the pressure, and of the swiftness of the friction.

It must either be granted that the electric phenomena produced by the revolution of an electrical machine are the result of a new state, condition, or property of matter, arising from friction, or that the electric fluid is itself a peculiar substance. If the former be admitted, there are not two electricities to decompose during the revolution of the machine, but the matter composing the rubber assumes one state and condition, and the glass another and opposite state and condition; and any language calculated to convey the idea that matter is released or transferred, whilst it is intended to be understood that such is not the case, is totally inadmissible, being calculated to confirm error. If the latter theory be adopted, the truth of my experiments on the subject must be admitted; and the only point of dispute is whether the fluid is single or compound. But those who deny the existence of the electric matter have but one theory to rest upon, and they must assume that the phenomena developed during the working of the machine arise from the matter composing the rubber assuming one state, whilst that of the glass assumes another. For, let it be granted, for the sake of argument, that electricity is composed of a positive and negative fluid, their own laws vitiate M. Becquerel's positions, when applied to the phenomena of the electrical machine. For instance, he says, "the two electricities always recombine on contact." The annexed sketch represents a section of a cylinder electrical machine. The



amalgam on the rubber, in the present instance, is only applied to as much of the surface as is between the two lines, A B, so that the portions of the rubber above A and below B are in direct contact with the glass. When the cylinder is revolved, electricity is developed, being principally disengaged along the amalgam between the lines, A B; and whilst the positive fluid is carried by the cylinder round to the conductor, E, the negative fluid transports itself, there being no motion in the rubber, to the knob or conductor, F. What is the cause of this peculiar motion of the electric fluids? It cannot be mutual repulsion, for they are assumed to have the strongest possible attraction for each other: yet here is an instance in which we find them not only moving but rubbed together in most intimate contact between the rubber and glass at D C, and, notwithstanding, combination does not take place, although the proportions in which the supposed two fluids are disengaged are exactly those required for their perfect combination. The negative, in fact, instead of uniting with the positive, is driven by some mysterious influence away from it to the knob, or conductor, F. Thus, on this theory of two fluids there is the most direct opposition between the fact and M. Becquerel's position that the two electricities always recombine on contact.

Further. Whilst the negative rubber refuses to receive and neutralise the positive fluid, with which it is in most intimate connection, the conductor, E, does not decline it (although in a positive state, as compared with F, after the revolution of the cylinder has begun); on the contrary, it receives a strong charge, although under less advantageous circumstances, not being in contact with the cylinder; for the row of points along the conductor can never render the connection so intimate as direct contact, and especially such close contact as exists during the pressure of the rubber against the glass. There is thus a complete contradiction in the deductions to which we are lead by the application of the theory of the two fluids to the explanation of the phenomena of the electrical machine, and the prevalent ideas concerning their nature, for the rubber charged with electric fluid (which is considered to have such strong affinity for the positive, that by mere contact they are said to combine), and in direct contact with the cylinder, refuses to discharge the negative fluid; whilst the conductor, E, already in a positive state, and, therefore, naturally indisposed to receive any more of the positive fluid, takes all that the charged part of the cylinder has to deliver. This fact does not confirm the law, that like electricities repel, and unlike attract each other. The advocates of the theory of two fluids owe to the scientific world an explanation of this difficulty.

Let us now apply the other theory to the explanation of the phenomena of the electrical machine, and assume that there is no transference of matter, but that the rubber and cylinder assume new and opposite states. When two kinds of matter in these opposite states are presented to each other they must, from the results observed, exercise a reciprocal influence on each other, the positive state of the one destroying the negative state of the other, a change that arises so instantaneously that its rapidity has not yet been measured, though many miles of wire have been the medium by which it has been effected. We will suppose these new states to originate solely at the amalgam between the lines A B. Now, supposing there may be some reason why the two states could not be restored between A B (a supposition, notwithstanding, for which there is not the least ground), there cannot be a shadow of a cause for the non-restoration of the original condition of the rubber and cylinder at D C. Therefore, the electricities (for I must still use some of the language of my opponents) do not combine on contact at the very source where it is liberated, when no obstacle to its recomposition is present, for no obstacle is offered to the restoration of the equilibrium or natural state of the rubber and glass at D C, and yet it is not restored.

M. Becquerel states in his first conclusion that the two electricities are decomposed by friction. If it be so, electricity must be matter, for friction cannot produce two things from nothing. By increasing the pressure the fluid is disengaged with greater facility; this, however would not be the case if there were nothing to decompose: consequently the friction decomposes something; but as those with whom we have to do at present deny the existence and transference of the electrical matter, they ought not to employ language that would convey an opposite impression. If the recomposition, says M. Becquerel, again be made in an appreciable space of time, the faster we turn the machine the higher will the maximum tension rise. This position is not, however, altogether sound. It would rather seem that, after one revolution of the machine, the electric disturbance should be at a maximum, for the positive state of the glass, supposing it to escape neutralization at D C, ought to be destroyed when it again meets the negative rubber below B, since by mere contact the two electricities are said to combine. The neutralization should in reality take place before the glass and rubber separate at D C, in an inappreciable space of time, since the restoration of the electric equilibrium, as already observed, is ef-

fected so instantaneously, that the rapidity with which it takes place cannot be measured through miles of wire; but the rubber and cylinder do not neutralize each other, therefore the effects produced by the revolution of the machine must arise from some other cause than their mere assumption of new states and conditions.

On this theory some difficulty appears to arise in explaining another part of the phenomena of the electrical machine. It is a property in an electrified body to induce a negative state in surrounding bodies. During the friction that takes place a negative state is induced in the rubber, but an increased positive state in the conductor, E, for it being assumed that no matter is transferred, it can only be by induction that the new state of the conductor, E, originates. It is, however, contrary to known laws, that a positive state should be induced; it should be negative, for the insulated state of the conductor ought not to make any difference in the result, because no matter having to be ejected from the conductor, a conducting communication between it and the earth is unnecessary. As regards M. Becquerel's third conclusion, it does not of necessity follow that the results produced by the working of the machine are effected in an infinitely small space of time, for when the instrument is in good working order, a very slow motion will develope pyrogen.

The actual disengagement of electricity is, however, independent of the pressure and swiftness of the friction, although the rapidity of its disengagement is materially influenced both by the pressure and velocity, for the higher the pressure and swifter the motion, the greater is the amount of fluid collected in the conductor, because the rapidity of the motion allows the pyrogen less opportunity of escape, and this material agent being developed at the rubber, the anomalies observed during the above examination of the two theories are fully explained. No neutralization takes place at the rubber, because the glass, silk, and leather, are not sufficiently good conductors to admit of the escape of the fluid, which, being carried on the surface of the glass to the metallic points of the conductor, passes on to it. Some of the fluid does, notwithstanding, escape, and hence the necessity for the compensation that M. Peltier thought it necessary to make, in order to avoid error in his calculations. When a communication is made between the poles of the machine by wire, or other conducting medise, a complete electric circuit is established; but when this is broken, as by the complete insulation of the conductor E, the pyrogen accumulates in it, owing to the cylinder continuing to carry forward the fluid from the rubber, as long as the motion of the machine is continued. On the stoppage of the machine it is, however, soon dissipated, partly by returning along the cylinder to its source, and partly by diffusion in the air.

Ordnance Office, Portsmouth, Dec. 27. JOHN J. LAKE.

THE ANEROID BAROMETER.

SIR,—One of your most intelligent correspondents, some time since, made a few remarks upon the "Aneroid Barometer," which, coming from a gentleman of his known scientific knowledge, rather surprised me. He says as follows, "The indications of the Aneroid have proved most satisfactory. I say this advisedly, after an extensive series of observations, made during a period of many months, by the elegant Aneroid supplied to me by Mr. Dent, the eminent chronometer maker, to whom the public are under many obligations for its introduction. In sensibility it far outwits the indications of the common barometer; and on the sea coast, in reference to its presage of the coming storm, the Aneroid barometer must prove an invaluable boon."

Now, it seems to me that your correspondent has worked many months at these observations, and, in common with many other scientific men, has omitted the most simple, and also the most important, test, and that is, to see if the "elegant" Aneroid is at all affected by variation of temperature; and had your learned correspondent made the most simple trial on the subject, I am certain he would have withheld his observations, as the Aneroid, both in principle and in practice, is found to be so greatly affected by temperature, as to render it utterly unfit for accurate observations; and in situations exposed to sudden cold or hot winds—for instance, on board of ships—it would positively be dangerous to any captain who might be silly enough to venture to sea without a mercurial barometer, as the Aneroid might indicate a rise—consequently a calm—when the mercurial barometer would really show an opposite result, the rise in the Aneroid being only occasioned by a sudden warm atmosphere passing over, which is a phenomenon of very common occurrence in certain latitudes. My remarks are mainly elicited by the very positive and favourable character given to the Aneroid by different persons, who have really a high standing as men of science—a character, indeed, which would lead many practical men into grave and serious errors, if they entirely placed their dependence upon the Aneroid, as far as barometrical pressure is concerned. But, in order to substantiate these observations, I may as well lay before you the result of an extensive series of experiments, which I undertook in order to arrive, as near as possible, at the true value of this instrument, which I feel bound to term a mere elegant toy.

In the first place, I must, in justice to your learned correspondent, say, that I have been for many years in possession of standard instruments, in whose indications I can place the most implicit reliance, which is an advantage, in all probability, not participated in by your correspondent; consequently his observations may be the results of his having an instrument *called* a barometer, but which has not the slightest claim to that name; and I am sorry to say that there are many such, which are made by persons not being in the least degree qualified to undertake the construction of such instruments.

Experiment 1.—Eight Aneroids were placed side by side, after having been first carefully adjusted to precisely the same indication; and the result was, that three weeks after, six of them were so totally at variance, that I laid them aside as unfit to undergo the contest, some being as much as 2-10ths of an inch of mercury above others, the reason being, as will become evident from the second experiment, that the temperature of the atmosphere had, within the period named, experienced a fall of 25° Fahr.

Experiment 2.—The remaining two were then again carefully adjusted to my standard, both as regards pressure and temperature, and I placed the one in the vicinity of a parlour fire, and the other freely exposed to the external air; the result in this case was, that the former indicated a pressure of 29·75 inches, while the latter showed 29·55 inches, a difference, it will be perceived, of no less than one-fifth of an inch. I have carefully repeated the experiment again and again, and invariably with the same results, as far as regards the difference between the two Aneroids; but the pressure had, of course, altered in the time occupied—viz., four days.

Experiment 3.—The standard barometer experienced a sudden depression; I immediately placed the Aneroid that was outside, after careful readjustment, in the room of the other one, that is, in the warm atmosphere. In four hours the mercurial barometer fell from 30·47 inches to 30·36 inches, the Aneroid rose to 30·55 in., showing thereby what an "invaluable boon" (to use your correspondent's words) it would be to the captains of vessels, in latitudes where the temperature is liable to sudden changes, or for measuring mountains, where the difference of temperature from the base to summit is, in many instances, almost incredible. I had, indeed, wished that the task of correcting the various erroneous, and, in many instances, I have no doubt, puffing, opinions of the Aneroid, had fallen into abler hands, and into hands that would have more time to devote to the controversy which the interested parties are likely to raise; but the silence observed by those persons who ought to have spoken on the subject, I can only attribute to their thinking the instrument as too imperfect, and too unscientific in theory, and, as will be seen, in practice, for them to bestow any of their valuable time upon it; and decidedly I should have thought the same, had I not been informed, upon something like good authority, that attempts are being made, but I do not know with what chance of success, to get the Aneroid introduced in her Majesty's navy, in lieu of the mercurial barometer and of the sympiesometer; the latter an instrument invented by Mr. Adie, of Edinburgh, and which has stood the test for these last 20 years and upwards, and which, in my humble opinion, is not likely to be displaced so easily by such a bungling, though specious, contrivance, seeing that, within the last few years, several attempts have been made, and some on more scientific principles than the Aneroid, and all have failed. Among others, I may notice the thermo-barometer, which, for a time, carried the sway, owing to the very indirect, but systematic, puffing it had received from different persons who were presented with one or two instruments, but who never troubled themselves with verifying their opinions by experimental inquiry, taking, as a matter of course, all the statements of the inventor to be correct. Practical, (?) working, (?) and other opticians recommended it, and a great quantity were sold. The toy, however, has long since found its level. Purchasers expostulated; shopkeepers said, "Very sorry, dear me," &c. The opticians who really had a character to lose, had all along declined to sell it, as they do now the Aneroid; or, if they did, it was with the special caution that they would not be responsible for its accuracy. In forwarding these observations, I beg to say, that I am actuated by a desire to promulgate truth; and, in order to gain a double assurance upon the subject, I have exhibited in part the above experiments to an eminent scientific man, who at once acknowledged the accuracy of my conclusions.—HENRY NEGRETTI: *Hatton Garden, Jan.* 3.

RAILWAY REGENERATION—MR. SHEPHERD'S PLAN.

SIR,—Having devoted much attention to the management of railways, both here and on the continent, and considering that a great diminution might be effected in the working cost of the English railways, I have forwarded the following statement, embodying my views thereon, to the respective boards, and which I should also feel obliged by having inserted in your Journal, for as extensive publication as possible.

I may observe, that the answers I have received from some of the directors state that the lines over which they preside are so economically and efficiently worked as to be literally impossible than any reduction can be effected; while it is well known (alas! for the poor shareholders) that the working expenses at the present time amount from 39 to 40 per cent.! Perhaps, Sir, if you give publicity to the accompanying detail, the shareholders may be induced to judge for themselves; and if the present directors and managers cannot consent to make any reduction, they may bethink themselves as to the desirability of confiding their property to other hands, that something like an equivalent return (and which I feel assured can be effected) may be made on the capital they have embarked.

Fleet-street, Jan. 1. GEORGE SHEPHERD, C.E.

SIR,—I beg to submit to you, and the direction over whom you preside, my suggestions for the future workings of your line of railway on principles of economy. I hope you will permit me to make a few practical observations, in the first instance, on the question at issue, in order to illustrate the subject on which I have entered; and, in exposing existing evils, I hope you will exonerate me from all interested motives, as it is my intention, in this communication, to lay before you matters as they actually exist, and a remedy for these abuses.—First, in the mechanical department. This department on each railway forms, in the half-yearly balance-sheet of the company, a most formidable item, nor can we wonder at it, when we take into consideration the number of officials, the staff of actually employed and reserve engine-drivers, stokers, and cleaners, the number of mechanics and labourers employed in the workshops; and all this carried on on a system called *company-work*—or what may be more justly termed, the workmen going to work at 6 o'clock in the morning, and doing as little as they possibly can until that hour in the evening.

But before entering further on this subject, I beg to call your attention to the immense amount of steam-power and other machinery employed at some of the extensive iron and coal-works in this country. In many of these vast establishments there may be found steam-engines, and other machinery, equal to the steam-power of any railway in England, and doing 50 times more work, the greater portion of which are in constant operation day and night, such as the blast-engines, engines driving the ponderous rolling-mills and forges, together with other machinery. Locomotive engines, compared with these monsters, are but mere steam infants. Again, in the mining department, there are engines of enormous power pumping water from the mines, and raising the coal and ironstone to surface. If any person takes the trouble to visit these establishments, although the machinery is in almost constant motion, every part of it will be found in the most perfect order and neatness. I can affirm upon authority, taking the whole machinery in these vast establishments, although doing fifty times the amount of work of any railway, that the annual cost in repairs does not exceed one-twentieth of that of railway machinery under the present system of company-work management. Again, in these days of competition, how long would these extensive establishments exist if their operations were carried on at company-work pace?—would not destruction and disgrace be the natural results?

In these establishments, each ton of coal is delivered to the spot required at a stated price; each bar of iron is made at a certain cost, and in case any of the machinery be broken, the work is inspected, and either so many hours or days, according to the extent of the damage, is allowed to repair the defect—but no company-work is tolerated.

Now, let us take a brief view of railway company-work. I have before stated what company-work may be justly termed, for such I have found it to be from my own experience. The name of a company is considered by workmen as a signal for imposition with impunity. When any of the directors or others may go through the workshops, the men are seen to be as industrious as possible; but the moment their backs are turned upon them, all that industry is changed into laziness and play; and I have actually seen four or five persons put to watch the approach of any of the masters; and, upon a given signal, all have been again actively engaged; or, in case any of the work turns out bad from negligence, or fails in the purpose intended, the only ceremony is to throw it aside—it will come in for scraps—there are plenty of materials in the company's stores, and also plenty of time to make another. By these repeated, and frequently intentional, acts on the part of the employed, there is always plenty of work to be found in some way or other. I have frequently observed engines requiring the most trifling repairs laid up for days, and even weeks, with the engine-driver and stoker attending upon them, whereas the whole defect might have been repaired in a few hours, and sent again to duty.

Another subject equally deserving of consideration is, that steam machinery in private establishments will be observed in operation both day and night, some portion of the machinery even exceed railway velocities; but it appears, from facts I shall bring forward, that a locomotive engine is not capable of running more than from sixty to seventy miles per day on an average; the average duty of a locomotive engine ought to be 200 miles per day; and if it will not perform this, which, at 30 miles per hour, is but, say, seven hours' work, we must indeed conclude that steam is truly in its infancy. If we are to judge from actual workings, a locomotive engine cannot run, on an average, 200 miles per day, or that the present managers do not wish them to do so. The amount of duty performed by a locomotive engine on the South Devon Railway is as follows:—An engine makes a trip of 53 miles one day; the second day two trips, or 106 miles; the third day it remains in the engine-shed to rest. The same system is carried out if we follow the progress of a train from Plymouth to London. From Plymouth to Exeter is the work of one engine; from Exeter to Bristol the work of a second; from Bristol to Swindon the work of a third; and from Swindon to London the fourth!* Every person conversant with the capabilities of a steam-engine, on seeing these absurd abuses of its powers, must become convinced that great reforms are required in railway management.

In laying these statements before you, some reasons must be given for the abuses named. We are told that the different engines are made to suit the different portions of the line on which they are run, and that the engines which run on the heavy gradients burn too much coke for the light gradients. But I would ask, is scientific practice so far in arrear as not to be able to overcome such trifling difficulties—are there no means of checking the combustion, when requisite, so as to permit of only a sufficient quantity of steam being generated to propel the trains over the light gradients? No one will deny the possibility of this. Here we have a beautiful illustration of railway management—namely, in order to save a few hundred pounds in fuel, &c., a midway locomotive establishment is kept up, which costs thousands of pounds annually.

I could enlarge greatly upon these abuses; but I will proceed to lay before you, as briefly as possible, my suggestions.

In the first place, I propose that, instead of keeping up the present staff of engine-drivers, stokers, and cleaners, who are paid their wages whether they work or not, to establish a system of paying the engine-drivers and guards of every train a stated sum for a given distance (say, per 100 miles) the engine-driver to find his own stoker and cleaner—the chief guard to find his own underguards and wheel-greasers. Fines, of course, for every offence, would be strictly enforced, as at present. In this system you will reduce no person's wages, yet materially reduce your working expenses by only paying for work actually done; and it will soon be observed that the cleaners will disappear from the line altogether, as the engine-driver will perform this operation himself with his stoker; and you will also find that he will tell you he can run his 200 miles per day with comfort. This, of course, will lead to a general reduction in the number of engines and engine-drivers to work the line; and, in order to carry out still greater principles of economy, I propose that an annual sum (say, 200*l.*) should be given as a premium to the engine-drivers. This sum should be divided into first, second, third, and fourth-class prizes, and awarded to those men who have had the least accidents, run the greatest number of miles, burnt the least quantity of fuel, consumed the least quantity of general stores, the most punctual to the time-tables, and whose engines at the annual inspection were in the best condition, and had cost the least in repairs during the year. This, of course, would lead to strict principles of economy and attention on the part of the engine-drivers, and greatly reduce the general expenditure, and, at the same time, be the means of singling out all the slovenly engine-drivers. A complete register of the cost of each engine should be kept. With respect to the workshops, whether locomotive or waggon department, I propose to dispense entirely with all company-work; and to effect this I would lay down a tradesman's price for every article, whether to be made or repaired; the superintendent should keep a correct account of all stock repaired, the cost of each waggon or engine, by whom the work was done, and the length of time it was in hand.

It is obvious that, if this system of railway management is instituted, the general expenditure will be greatly reduced, as each engine-driver, keeping the annual prize in view, will use every precaution to keep his engine in working order; and each person in the workshops will be anxious to get his work out of hand, when he finds that he has got a fixed price for it. In this communication, I have merely given the general outline; but I am prepared to go minutely into the subject, if you entertain my propositions, while I feel confident that no one will venture to deny their applicability; and, if they are effectually carried out, the result will be an increased safety to the railway traveller, a good dividend to the shareholder, and the restoration of railway property to its legitimate value.

I now come to the maintenance of way; and, in my opinion, measures may be here introduced which will greatly reduce expenditure in this department. Here I propose to give out the line of railway in lengths—say, of 20 miles; the contractor of each length to furnish all the police and signalmen on their respective lengths. It is, then, obvious that when the trains had passed each man would be employed in general repairs of the road, instead of walking up and down the line with his hands in his pockets. Of course, stringent specifications would be drawn up for these contractors, and the directors would see that efficient men were employed for the purpose. If this proposition is carried out, the contractor will be able to turn these men's time to a profitable account, and, consequently, give in his tender for the work accordingly. As for other sundry works, such as arranging the carriages for the trains, &c., these I would let at so much per waggon, which would greatly reduce the system of porterage. I trust you will not consider that I am going to the extreme in my system of economy, but my desire is to destroy all the ruinous "company-work," root and branch; and from the statements brought forward in this paper, it will be seen that I am only following in the steps of private enterprise; and certainly it does not appear that railway property can be remunerative unless a more economical system of railway management can be instituted, in lieu of that now adopted; but I have no hesitation in saying, that if the suggestions here made are carried out, the working expenses of railways will be reduced from 39 to 25 per cent. G. SHEPHERD.

* The same carriages run through the journey from Plymouth to London, and *vice versâ*.

CHEMICAL STRUCTURE OF IRON.

SIR,—I am obliged to Mr. Bowman for his elucidation of the term, "chrystalline charcoal iron," which I confess I did not understand, as applied to designate the hardest and soundest iron made. I have yet to learn that there really are two distinct varieties of malleable iron, the one fibrous, the other crystalline—that is, permanently so. The chrystalline may, as far as I have observed, be always made to pass into the fibrous fracture, and *vice versâ*, by very simple means, to some of which I have formerly alluded. As I have had some little experience upon the subject of Indian iron, I naturally felt a desire to learn the meaning of the phrase "chrystalline charcoal iron" as applied to this material.

I certainly did not intend any unhandsome critique upon either the phrase or Mr. Thorneycroft; on the contrary, I give him great credit for his discrimination, in selecting such a material as Indian iron to stamp a character of superiority upon his rails and wheel tires. It is enough for me to know that these rails and tires are prepared from such a material, to convince me that they are infinitely superior in quality to any others produced in this country, and require not the tinsel of a ridiculous phrase (for it is ridiculous) to recommend them. I should be very glad, if I could, to pay a visit to the Shrubbery Iron-Works; and though only an iron-making theorist, to demonstrate practically to the excellent proprietor, that the great waste which occurs in puddling Indian pig-iron can readily be avoided. This would be, according to Mr. Bowman's desire, affording common sense assistance to practical men. The quality of rail-iron is, indeed, a great commercial question, and Mr. Thorneycroft is entitled to the thanks of the British public, for introducing rails which, if universally adopted, would reduce the annual expenses of re-laying what is mis-called the *permanent way* 75 per cent., at the lowest computation.

Mr. D. Mushet is highly complimentary, in terming my remarks upon the carbo-oxide theory *infernal jargon*. Having defined science, I wish he would define what is meant by this elegant phrase. From his aversion to derivatives from other languages, I presume he would define it to be "plain English"—"very plain." Having stated a few facts observed and recorded during a pretty long course of practical experience (some of which, by the way, very nearly correspond with Mr. Mushet's own views upon the subject), he very politely informs your readers, that the "clack of the rolling-mill would, *per force*, be silenced before such *infernal jargon*." The melody of Orpheus could only stay the gliding stream. The clank of the rolling-mill ceases, obedient to the din of Radley, "Wootz," and Co.

Mr. D. Mushet is an able theorist, and, excepting a few tolerably strong phrases, such as he has freely applied to designate Radley, "Wootz," and Co., and their *jargon*, an elegant writer; but practice he never can have known, otherwise he would see the fallacy of applying accurate science to a subject which does not admit of its accurate requirements. In short, like Sir Hudibras, he

> Little knows what troubles do environ,
> The man who meddles with *grey* iron.

Mr. Leighton is, perhaps, aware that two pieces of pure iron, placed one upon the other, and brought to a welding heat, shut up in a luted clay crucible, where neither carbon nor earthy matter is present to coat them, will weld together as firmly as if united by the ordinary methods. Furnace cinder, when the furnace is producing foundry iron, is always transparent, when suddenly cooled in thin sheets. When cooled slowly, it usually becomes opaque, and the transparency is usually confined to the edges of the cinder as it flows, because they are more quickly cooled than the interior of the mass. Transparent cinder becomes opaque, by annealing it for a few hours at a low heat. I suppose the explanation is not known, for the change is merely called devitufication. The most transparent blast-furnace cinder, when pulverised and re-melted in a crucible, becomes of a dark colour, and often so dark, as to cease being transparent. This seems to indicate that the small portion of iron which is always present in furnace cinder, however pure and white it may appear, exists therein as protoxide. I cannot comprehend Mr. Leighton's entire solid fibre; if the word fibre is interpreted in its ordinary sense, we might with equal propriety speak of a solid pore.—WOOTZ: *Jan.* 1.

[For continuation of "Original Correspondence," see page 3.]

AMERICAN FREEZING MACHINE.—The scientific journals inform us of an ingenious invention by Dr. John Gorrie, of Florida, by means of which water is rapidly frozen. From the account given of the arrangement, it appears founded upon correct principles, involving the laws of pure mechanics, and of the physical conditions of matter:—"Essentially it consists of two simple agents—a force pump in which air is divested of latent heat by mechanical compression, and an engine in which the same air is made to operate expansively, and, in the process, absorb from water to be frozen the heat due to its increase of volume. But there are several auxiliary agents for giving this simple contrivance its highest effective utility. Thus, by the obvious arrangement of attaching the pump and engine to the opposite ends of a common beam, the mechanical power consumed in condensing air in the pump is, to a considerable extent, recovered in its expansion in the engine. At the same time, the heat evolved by the compression of the air is extinguished by a jet of water thrown into the body of the force-pump, by means of a small pump; while the heat necessary to impart to the expanding air the elasticity and mechanical force, due to its quantity and volume, is furnished through a similar pump, which takes from a cistern a portion of liquid, and, after injecting it among the expanding air in the engine, returns it to the same cistern. This cistern thus operates as a reservoir of cold, and as the sufficient means of abstracting heat from water which is to be converted into ice, and which is immersed in it, in suitable vessels for the purpose."

INVALID BED.—Capt. Purnell, of Liverpool, has invented an invalid bed, of extremely ingenious principle. It consists of a square frame of metal, the full size of the bed, and with strong cloth stretched over it. This is fixed between the bed and the under sheet, and is so contrived with very simple machinery, that the patient may easily be elevated or lowered, without being lifted out of bed; so that the bed, or its linen, may be again changed or made up. It involves also another great convenience in the sick bed conducive to cleanliness, and the body of the invalid may also be elevated upon an inclined plane when required, whether for ease or other object. One nurse may readily work the whole.

OPINION OF RAILWAYS IN 1825—(From the *Quarterly Review* of that year).—"As to those persons who speculate on making railways generally throughout the kingdom, and superseding all the canals, all the waggons, mails, and stage coaches, post-chaises, and, in short every other mode of conveyance by land and by water, we deem them and their visionary schemes unworthy of notice. What, for instance, can be more *palpably absurd and ridiculous* than the following paragraph (in which a prospect is held out of locomotive travelling twice as fast as stage coaches):—We should as soon (adds the reviewer) expect the people of Woolwich to suffer themselves to be fired off upon one of Congreve's rockets, as trust ourselves to the mercy of such a machine, going at such a rate."—*Salt's Railway and Commercial Information.*

GREAT WESTERN.—This company intend constructing warehouses at their Paddington terminus, to accommodate the traffic in corn and flour, which of late has increased considerably.

BILIOUS COMPLAINTS, INDIGESTION, AND SICK HEADACHES, CURED BY HOLLOWAY'S PILLS.—Persons subject to, or suffering from any of these complaints, should immediately take a few doses of this most extraordinary medicine, which is a certain and efficacious remedy for all disorders arising from a derangement of the digestive organs; it not only cures, but preserves the body in sound health and strength, and likewise improves the powers and faculties of the mind. For debilitated constitutions, nervous affections, want of appetite, and diseases of the liver, there is no remedy equal to it. Every one leading a sedentary life should take Holloway's pills as a preventative of those maladies.—Sold by all druggists, and at Prof. Holloway's establishment, 244, Strand.

THE SCOTCH IRON TRADE—ANNUAL RETURNS.

SIR,—In presenting the annexed tabular digest of the iron trade of Scotland, for the year 1849, permit us to observe, that as the correctness of our former annual reports has borne the strictest examination, the present one, having been compiled with every possible care, and from indisputable data, we hope will be found not inferior in this respect, and we doubt not its details will be appreciated by other parties who, with ourselves, desire such information.

Throughout the year the course of the market for pig-iron has been devious, and the result, we believe, in many instances, not equal to the expectations of parties operating. In anticipation of extensive spring demand, the market opened with animation and firmness, and the advancing prices which marked the close of 1848, progressed from 44s. to 44s. 6d. for mixed Nos. up to 53s. in the end of February, when it was discovered the hoped-for demand had been over-anticipated; the advance could, therefore, no longer be maintained, and the price gradually declined to 42s. in May following. The settlement of the Schleswig-Holstein question afterwards revived the hopes of holders and speculators, and, under the influence of some fall export orders, the price again improved, attaining 46s. in July and August, when—this demand having been supplied—it again receded to 42s. to 42s. 6d. in October. Since that date the market has fluctuated remarkably; forced up to 48s., receding to 45s., and recovering afterwards to 47s.—the prices again drooping almost imperceptibly to 45s. 6d. to 46s. Last week business was more active, and the current value has advanced to 47s. to 47s. 6d. mixed Nos., and 48s. No. 1—prompt cash, free on board, with 1s. to 1s. 6d. extra on three months open contracts.

A steady, though not active, business has been transacted in manufactured iron, which has ruled between 5*l.* 10s. and 6*l.* 10s. for merchant bars. We consider the present quotation of 5*l.* 10s. to 5*l.* 15s., less 4 per cent. discount for cash, to be well maintained, with rather more cheering prospects for spring orders.

Our tables show that, as compared with 1848, the product and stock of pig-iron are 92,000 and 95,000 tons respectively *in excess*, while the entire shipments are 14,858 tons *less*—being 153,183 tons to foreign imports, and 221,943 tons coastwise in 1849, against 162,151 tons foreign, and 227,833 tons coastwise in 1848; they also include the comparative annual exports of this article to each country since 1846, with the prices per month, and the production and stock over the same period, and present the gratifying fact, that, notwithstanding the extreme depression in the iron trade generally, and the falling off in shipments and diminished consumption for malleable iron purposes in Scotland this year, the increase of stock has been little more than commensurate with the extra production since 31st Dec., 1848. It, therefore, follows that our local and interior requirements must have improved to the extent of the above decrease in the items of shipments and malleable iron.

Taking into consideration the extensive stocks here and throughout the north of England (where, founders and others having availed of the late temporary, yet extensive, reduction of rates of transport, per railways and canal, in Lancashire, &c., to lay in heavy supplies on extremely advantageous terms), as well as on the sea-board of America, and the actively increasing make of Scotch pig-iron, there may be some reason to apprehend a marked increase of accumulated stock in this district by the time spring shipments open; and should the American Government succeed in further taxing this article in their tariff, these circumstances combined would have a very unfavourable effect on the iron interests of this country. The general belief, however, is that the present rate of duty on Pig-iron in America will remain unaltered this session of Congress; in which case, as also from the commercially favourable state of that country, an increased extent of exports thither may be anticipated.

The continent of Europe being now politically quiet, a result similarly favourable may also be expected from that quarter.

We close our remarks by directing your attention, for more particular details, to the annexed compend.—P. & H. FERGUSON & RUIND: *Glasgow, Dec.* 31, 1849.

DIGEST OF THE IRON TRADE OF SCOTLAND FOR 1849.

PIG-IRON WORKS.	FURNACES—Dec. 31, 1849. *In Blast.*	*Out.*	*Building.*	*Total.*
Gartsherrie	16	—	—	16
Dundyvan	8	1	—	9
Clyde	6	1	—	7
Govan	4	2	—	6
Calder	5	3	—	8
Langloan	6	—	—	6
Carnbroe	3	3	—	6
Glengarnock	9	—	—	9
Summerlee	6	—	—	6
Monkland	9	—	—	9
Coltness	6	—	—	6
Omoa	4	—	—	4
Shotts	4	—	—	4
Castlehill	2	1	—	3
Blair	—	5	—	5
Muirkirk	1	2	—	3
Garscube	—	2	—	2
Carron	2	3	—	5
Devon	1	1	—	2
Forth	4	1	1	6
Kinniel	4	—	—	4
Lugar	4	—	—	4
Eglinton	3	1	—	4
Lochgelly	1	1	—	2
Dalmellington	3	—	—	3
Portland	2	—	—	2
Nithsdale	—	—	3	3
Total furnaces	114	27	4	144

	Tons
UNITED STATES.	
New York	61932
Boston	21650
Philadelphia	6462
New Orleans	1567
Baltimore	1871
Charleston	170
Mobile	250
Savannah	310
Total	94212
BRITISH AMERICA.	
Quebec and Montreal	6224
St. John's, New Brunswick	800
Pictou, Nova Scotia	100
Halifax, ditto	15
Newfoundland	55
St. Stephen's, New Brunswick	25
Yarmouth, Nova Scotia	6
Prince Edward Island	10
Total	7235
SOUTH AMERICA.	
Rio de Janeiro	3325
Pernambuco	382
Valparaiso	91
Monte Video and Buenos Ayres	10
Lima	64
Bahia	334
Guayaquill	10
Total	4216
AUSTRALIA.	
Port Philip, Sydney, Adelaide	885
Van Diemen's Land	80
Total	965
CHINA.	
Hong-Kong	70
Shanghae	145
Total	21
GERMANY, HOLLAND, AND BELGIUM.	
Stettin and Swinemunde	2900
Hamburgh and Altona	3501
Konigsberg	635
Bremen	1256
Varel	844
Dantzic	370
Pillau and Memel	210
Leer	86
Rostock	230
Kiel	301
Emden	88
Griefswalde	190
Lubeck	65
Kanabecksmunde	20
Viele	16
Kolding	15
Harburg	207
Rotterdam	7733
Dordt	2200
Amsterdam	175
Antwerp	15
Ostend	30
Total	21087
ITALY.	
Genoa	3087
Leghorn	1451
Naples	1159
Palmero	70
Cevitta Vecchia	10
Ancona	100
Total	5877
AUSTRIA.	
Venice	50
Trieste	815
Total	865
JERSEY and GUERNSEY	280
DENMARK, SWEDEN, & NORWAY.	
Copenhagen	*Tons* 1233
redrickswerk	585
DENMARK, &c.—*continued.*	
Horsens	78
Aalborg	196
Aarhuus	85
Odensee	251
Randers	100
Rudkjobing	20
Nyborg	45
Assens	34
Rendsburg	382
Flensburg	100
Ringkjobing	50
Stubbekjobing	70
Natakov	113
Aram	40
Nestved	12
Elsinore	120
Drammen	285
Horten	250
Christiana	365
Drontheim	40
Laurvig	85
Lenvig	10
Total	4549
FRANCE.	
Rouen	3992
Havre	356
Nantes	1401
Marseilles	1150
Charente	156
Dunkirk	490
Calais	130
Bordeaux	453
St. Valery	60
Abbeville	205
Cherbourg	50
Total	8453
SPAIN.	
Barcelona	421
Seville	1355
Bilboa	593
Cadiz	115
Bayonne	50
Total	2534
PORTUGAL.	
Lisbon	365
Oporto	457
Total	822
WEST INDIES.	
Havannah	162
Trinidad	5
Barbadoes	21
Total	188
EAST INDIES.	
Bombay	200
Calcutta	428
Manilla	65
Ceylon and Madras	90
Batavia and Singapore	252
Total	1035
TURKEY AND EGYPT.	
Constantinople	525
Alexandria	125
Total	650
GRAND TOTAL.	
Foreign	153,183
Coastwise	221,943
Total tons	375,126
SHIPPED FOREIGN IN 1849.	
From Scotland	88,423
Ireland	8,156
England	56,604
Total tons	153,183

COMPARATIVE VIEW OF EXPORTS, STOCKS, PRODUCTION, AND PRICES, FROM 1846, 1847, 1848, AND 1849.

EXPORTS.	1849.	1848.	1847.	1846.
France *Tons*	8453	5859	24836	35567
Jersey and Guernsey	280	329	95	268
Germany, Holland, &c.	21087	41417	50857	48766
Denmark, Sweden and Norway	4549	7054	3416	2580
Russia	—	1220	962	—
Turkey and Egypt	650	911	531	260
Austria	865	4642	6226	5481
Italy	5877			
Spain	2534	1444	1703	2703
Portugal	822	535	283	435
South America	4216	1980	1343	538
West Indies	188	161	215	170
Australia	965	641	1458	607
British America	7335	4198	6327	7307
United States	94212	90235	44993	13918
China	215	573	175	—
East Indies	1035	950	—	—
Totals *Tons*	153,183	162,151	143,420	119,100
Coastwise	221,943	227,833	227,005	257,851

Stocks and Production.

	STOCK.	PRODUCTION.
31st December, 1846 *Tons*	145,000	580,000
„ 1847	90,000	540,000
Decrease in 1847	55,000	40,000
31st December, 1848	100,000	600,000
„ 1847	90,000	540,000
Increase in 1848	10,000	60,000
31st December, 1849	195,000	692,000
„ 1848	100,000	600,000
Increase in 1849	95,000	92,000

PRICE IN 1846.	1847.	1848.	1849.
January	£4 0 0	£3 13 4	£2 8 4	£2 7 0
February	3 17 6	3 13 4	2 10 0	2 11 7
March	3 10 0	3 11 1	2 4 4	2 9 9
April	3 6 0	3 10 8	2 1 9	2 8 0
May	3 10 0	3 5 3	2 2 3	2 3 9
June	3 8 0	3 5 0	2 3 0	2 4 4
July	3 10 0	3 8 1	2 5 6	2 5 0
August	3 15 0	3 7 9	2 5 3	2 5 4
September	3 13 6	3 6 0	2 5 3	2 4 0
October	3 9 6	2 19 10	2 3 0	2 2 10
November	3 9 0	2 11 0	2 2 0	2 4 3
December	3 12 6	2 7 6	2 2 4	2 7 2

Averages—1845: £3 16s.—£3 11s. 8d.—£3 5s.—£2 4s. 5d.—£2 6s. 1d.

	1845.	1846.	1847.	1848.	1849.
Malleable iron produced in Scotland	35,000	45,000	60,000	90,000	80,000

PRODUCTION AND STOCK.

Stock on hand 31st December, 1849 *Tons*	100,000
Stock this date in stores and makers' hands	195,000
Increase in 1849 *Tons*	95,000

Furnaces in blast.	Jan.	April.	July.	Oct.	Dec.
1848	85	85	93	101	103
1849	104	108	110	112	113

Production in 1848 *Tons*	692,000
Add stock 31st December, 1848	100,000—792,000
Exports as above	375,126
Stock this date	195,000
Consumed for malleable iron purposes in 1849	105,000—675,126
Leaving for local foundry and inland consumption in 1849 *Tons*	116,874

Stock at Runcorn and Fleetwood—represented at 35,000 tons.

JOHN A. COFFEY'S ESCULAPIAN STILL and CONDENSER (protected by Act 6 and 7 Vic., c. 65), is universally admitted one of the BEST INVENTIONS of the present day. Sent to any part of the world on receipt of Post-office order, payable to the inventor, 19, Sidney-street, Commercial-road, London. Price £5 5s. and upwards, low pressure; £10 10s. and upwards, high pressure.—Send for prospectus, or see working model.—N.B. All questions answered.

HAIG'S PATENT VENTILATOR AND CONTINUOUS BLAST-BLOWER.
DEPOT—No. 89, *MINORIES.*
This APPARATUS is confidently recommended to the notice of Proprietors of Mines, Shipowners, Engineers, Smiths, &c., being a most effectual form of VENTILATION for MINES, SHIPS, BUILDINGS, &c., and at the same time a powerful and economical FURNACE AND FORGE BLOWER.
For description of the machine, vide *Mining Journal* of November 17, 1849.

ASSAYING AND ANALYSIS.—ASSAYS and ANALYSES of MINERALS, METALS, SOILS, FURNACE, and all other MANUFACTURING PRODUCTS. INVENTORS and INTENDING PATENTEES assisted in PERFECTING any INVENTION involving an intimate knowledge of chemistry.
INSTRUCTION in all branches of ASSAYING, ANALYSIS, and METALLURGICAL and MANUFACTURING CHEMISTRY.
Communications to be addressed to Mr. Mitchell, 23, Hawley-road, Kentish Town.

THE EDINBURGH REVIEW, No. CLXXXIII., will be PUBLISHED on SATURDAY next.
CONTENTS:
1. COLONISATION.
2. BRITISH MINES: MINING RECORDS.
3. ORANGE PROCESSIONS.
4. GROTE'S HISTORY OF GREECE.
5. CURRER BELL'S "SHIRLEY:" A TALE.
6. TURKEY AND CHRISTENDOM.
7. SANITARY REFORM.
8. LAMARTINE'S HISTORY OF THE REVOLUTION OF 1848.
London: Longman and Co.—Edinburgh: A. and C. Black.

WORKING DRAWINGS OF STEAM MACHINERY.—In the "ARTIZAN" for January, price 1s., is commenced a series of articles on making Working Drawings, illustrated by PLATES of the details of a 30-horse engine (quarter size); the Screw *versus* the Paddle Wheel for the New Brazilian Mail Packets; a Steam Coaling Machine; Indicator Cards; American Patents; and a mass of engineering matter.—May be ordered of any bookseller, or will be sent free for 15 stamps, addressed to the publisher, *Artizan* office, 69, Cornhill.

HUSBANDS! BROTHERS! LOVERS! cannot make a more elegant and useful PRESENT to their beautiful and affectionate Wives, Sisters, and Fiançees, than THE LADY'S NEWSPAPER. The Volume for the ensuing year will be rife of more than ordinary attractions, compriaing, among other Novelties, Portraits and Autograph Letters of the Queens of England; Mediæval Embroidery; the Poison-Plants of the United Kingdom; a novel and richly-embellished series, comprising an Illustrated Calendar of the most Remarkable Days in each Week throughout the Year; the Female Charities; revival of Poetical Literature; National Music; the Female Novellists of England; together with all the usual Pictorial and Literary Features of this highly-popular Journal; all the Home and Foreign News of the Day, &c. &c.—Price 6d., 6s. 6d. per quarter, or 26s. per year. Office, 294, Strand. Sold by all Booksellers and Newsmen.

THE MINING ALMANACK for 1850: compiled and arranged by HENRY ENGLISH, Mining Engineer, &c. Under the especial sanction and patronage of H.R.H. PRINCE ALBERT, Lord Warden of the Stannaries, Chief Steward of the Duchy of Cornwall, Devon, &c.—THE SECOND VOLUME will appear early in JANUARY next, with ADDITIONAL TABLES and STATISTICS, connected with the Mining Interests.—Names of subscribers are requested to be addressed to Mr. H. English, 25, Fleet-street.

COAL MARKET, LONDON.
PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Bate's West Hartley 15—Buddle's West Hartley 15 6—Carr's Hartley 15 6—Chester Main 16 9—Davison's West Hartley 15 6—Hastings Hartley 15 6—North Percy Hartley 15—New Tanfield 14 6—Old Tanfield 13 6—Ord's Redheugh 15—Ravensworth West Hartley 15 6—Tanfield Moor Bute's 14—Walker Primrose 13 6—West Adairs 14—West Hartley 15 6—Wylam 15 9—Windsor's Pontop 14.—Wall's-End Brown 16—Brown's Gas 13—Burraton Killingworth 17—Heaton 17—Hilda 16 6—Northumberland 17—Original Gibson 16 9—Eden 17 9, 18—Lambton Primrose 18—Braddyll 18 6—Harraton 15 6—Hetton 18 9—Haswell 19—Hutton 17—Heselden 17 3—Jonassohns 16 6—Lambton 18 6—Lumley 17 6—North Hetton Lyons 18—Stewart's 18 9—Whitwell 17 3—Caradoc 18—Dennison 16 6—Heugh Hall 17 6—Hartlepool 18 9—Kelloe 18 6—South Hartlepool 18—Thornley 18—West Hetton 17 6—Whitworth 14 9—Adelaide Tees 17 9—Cowndon Tees 17 3—Maclean's Tees 16 6—South Durham 17—Tees 18 9—West Tees 16 6—Woodyfield 13 9—Cowpen Hartley 15 6—Nixon's Merthyr and Cardiff 21 6—Sidney's Hartley 15 6.—Ships at market, 206; sold, 92.

WEDNESDAY.—Buddle's West Hartley 15 6—Carr's Hartley 15 6—Chester Main 16 3—Davison's West Hartley 15 6—North Percy Hartley 15—New Tanfield 14 6—Ravensworth West Hartley 15 6—Tanfield Moor 15—Tanfield Moor Butes 14—Walker Primrose 13 9—West Adairs 14—Wall's-End Brown 16—Burraton Killingworth 17—Clennel 15 6—Gosforth 17—Hotspur 16—Heaton 17—Washington 16 3—Lambton Primrose 17 9—Bell 17 6—Braddyll 18 6—Belmont 17 9—Hetton 18 9—Hutton 17—Lumley 17 6—North Hetton Lyons 17 9—Russell's Hetton 18 6—Stewart's 18 9—Whitwell 17 3—Caradoc 18 Cowpen Hartley 15 6 Derwentwater Hartley 15 6—Nixon's Merthyr and Cardiff 21—Sidney's Hartley 15 6—North Hartlepool 16 3—South Kelloe 17 3—Whitworth Coke 20 6—Ships at market, 128; sold, 59.

FRIDAY.—Buddle's West Hartley 15 6—Carr's Hartley 15 6—Chester Main 16—Davison's West Hartley 15 6—Hasting's Hartley 15 6—Holywell 16 6—North Percy Hartley 15—Ord's Redheugh 14 6—Ravensworth's West Hartley 15 6—Tanfield Moor Bute's 14—Townley 15 6—West Hartley 15 3—Wall's-End Hedley 17—Hotspur 16—Haswell 18 9—Jonassolm's 16 3—Keepier 18—Stewart's 18 9—Whitwell 17 3—Denison 16 6—Hartlepool 18 9—South Kelloe 17 3—Whitworth 14 6—Anthracite 22—Cowpen Hartley 15 6—Nixon's Merthyr 21—Sidney's Hartley 15 6—Whitworth Coke 20.—Ships at market, 110; sold, 36.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.
THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY
BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th of every month; and from Suez on or about the 10th of the month.
BOMBAY.—Passengers for Bombay can proceed by this company's steamers of the 29th of the month, to Malta, thence to Alexandria by her Majesty's steamers, and from Suez by the Honourable East India Company's steamers.
MEDITERRANEAN.—MALTA—On the 20th and 29th of every month. CONSTANTINOPLE—On the 29th of the month. ALEXANDRIA—On the 20th of the month.
SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th 17th, and 27th of the month.
For plans of the vessels, rates of passage-money, and to secure passages and ship cargo, apply at the company's offices, No. 122, Leadenhall-street, London; and 57, High-street, Southampton.

LOANS ON DEBENTURES.—The CALEDONIAN RAILWAY COMPANY are prepared to RECEIVE TENDERS OF LOANS, in sums not less than £500.—Applications to be made or addressed to this office.
By order,
125, George-street, Edinburgh, Dec. 1, 1849. D. RANKINE, Treasurer.

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ORDNANCE AND BRASS FOUNDRY AND PATENT METAL WORKS,
FIELDGATE-STREET, WHITECHAPEL.

STRUVE'S PATENT MINE VENTILATOR.
COST—£150.
TO COLLIERY PROPRIETORS.
Quantity of air passed through a Mine almost unlimited, to the extent of 200,000 cubic feet per minute, if necessary—depending on size of apparatus.
COST of an APPARATUS to produce a ventilation of 20,000 cubic feet per minute, ONE HUNDRED and FIFTY POUNDS, exclusive of patent right. This amount of ventilation would be sufficient for a mine working 150 tons per day, provided it was not very fiery; in which case it would be desirable to provide for 30,000 cubic feet of air per minute. The capabilities of the Ventilator may be doubled at any future time, at a comparatively small cost.
The Ventilator has been at work for upwards of nine months at the Eaglesbush Colliery, near Neath, working under a rarefaction of 2½ to 3 inches of water, which demonstrates the impracticability of furnace ventilation, when the shafts are shallow and the airways small.—It is practical to rarify a mine by this ventilator to the extent of 2 feet of water, or 2 inches of mercury.
LICENSES will be GRANTED on application to
Mr. WILLIAM PRICE STRUVE, Swansea,
CIVIL ENGINEER AND MINERAL SURVEYOR.

INDURATED AND IMPERVIOUS STONE, CHALK, &c.—AGENTS, with capital, are WANTED in all TOWNS to SUPPLY (under British and Foreign Patents) the great demand for HUTCHISONISED MATERIALS—hard as granite, impervious to moisture, vermin, &c.; the cheapest and most durable for all buildings, hydraulic, paving, monumental and decorative work.—The profits are large.
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INVENTORS will receive (gratis), on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION of INVENTIONS and DESIGNS, with Reduced Scale of Fees.
Messrs. F. W. CAMPIN and CO. offer their services, and the benefit of many years experience, in SECURING PATENTS and REGISTRATIONS OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute.
Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.
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The experiments made by the Royal Artillery on the embrasures of Plymouth Citadel, constructed of Seyssel Asphalte Brickwork, under the orders of the Hon. Board of Ordnance, have fully proved the superiority, adhesiveness, and strength of Seyssel Asphalte over all other cementitious compositions. A printed account of these experiments can be had on application to I. FARRELL, Secretary,
Seyssel Asphalte Company—"Claridge's Patent"—Established 1838.
Note.—The application of the Asphalte of Seyssel is specially recommended by the Commissioners on the Fine Arts for covering the ground line of brickwork in marshy situations, and it has been suggested that it would be peculiarly applicable for covering the *areas* of closed *grave yards*, and for the construction of *catacombs*.

SEA, FIRE, LIFE ASSURANCE OFFICE,
CONNECTING THE MINING INTERESTS OF ENGLAND AND WALES.
(ESTABLISHED BY ACT OF PARLIAMENT.)
31, *CORNHILL, LONDON.*
Capital £100,000, in shares of 20s. each, to be paid in full on allotment, bearing a guaranteed interest of 5 per cent. in perpetuity (irrespective of further dividends) upon the paid-up capital.
Application for shares to be addressed to the Directors, at the offices of the Society.
Marine, fire, and life assurances granted on the most liberal terms.
Immediate and deferred annuities granted on terms especially advantageous for investment of capital. By order, AUG. COLLINGRIDGE, Managing Director.

SPECIMENS OF THE RATES OF PREMIUM FOR ASSURANCE OF £100.

Age.	*With Profits.*	*Age.*	*Without Profits.*
20	£1 19 3	20	£1 14 6
30	2 11 3	30	2 5 1
40	3 8 3	40	3 0 2

The whole of the Profits from the Life Department divided amongst the Policy holders. All Life Policies indisputable.—All Life Policies free of stamp duty.
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COUNTY SURVEYORS ALSO REQUIRED.

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SCOTTISH AMICABLE MUTUAL LIFE ASSURANCE SOCIETY.—ESTABLISHED 1826.
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PRESIDENT.
THE MOST NOBLE THE MARQUIS OF DALHOUSIE.
VICE-PRESIDENTS.
HIS GRACE THE DUKE OF BUCCLEUCH.
JOHN CAMPBELL COLQUHOUN, Esq., of KILLERMONT.
A Policy of £1000, opened with this Society in 1840, was, in 1846, by the addition of £2 per annum on every £100, increased to £1120. And, by the above principle of this Society, an addition of 2 per cent. per annum, upon the above accumulated sum of £1120, gives, as the value of the original policy of £1000,

In 1849, if it then becomes a claim	£1187	4 0
1850 „ „	1209	12 0
1851 „ „	1232	0 0
1852 „ „	1254	8 0

TABLE—*Illustrating Accumulation of Additions on* £1000 *Policy on Society's Plan*:—

Amount with Additions. At end of Years.	At 2 per cent. per ann.	Sum of Premiums paid according to Ages at entry. 20.	27.	34.	41.
6	£1120 0 0	£145 5 0	£167 8 4	£196 5 10	£235 19 2
13	1276 16 0	290 10 0	334 16 8	392 11 8	471 18 4
27	1659 6 7	581 0 0	669 13 4	785 3 4	943 16 8
55	2802 10 10	1162 0 0	—	—	—

New entrants admitted to every advantage.
Immediate, deferred, and survivorship annuities granted.
Every facility afforded to assurers.
THE WHOLE PROFITS DIVIDED AMONG THE ASSURED.
Manager—WILLIAM SPENS.
Resident Secretary in London—J. E. C. KOCH.

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